



Appendix C

RF Test Data for 2.4G WIFI (Conducted Measurement)

Product Name: Vivi Wireless Presentation

Trade Mark: Vivi

Test Model: VWP-210-16

Environmental Conditions

Temperature:	22.5 ° C
Relative Humidity:	53%
ATM Pressure:	100.0 kPa
Test Engineer:	Wunder Wu
Supervised by:	Li Huan



Appendix C.1: Duty Cycle

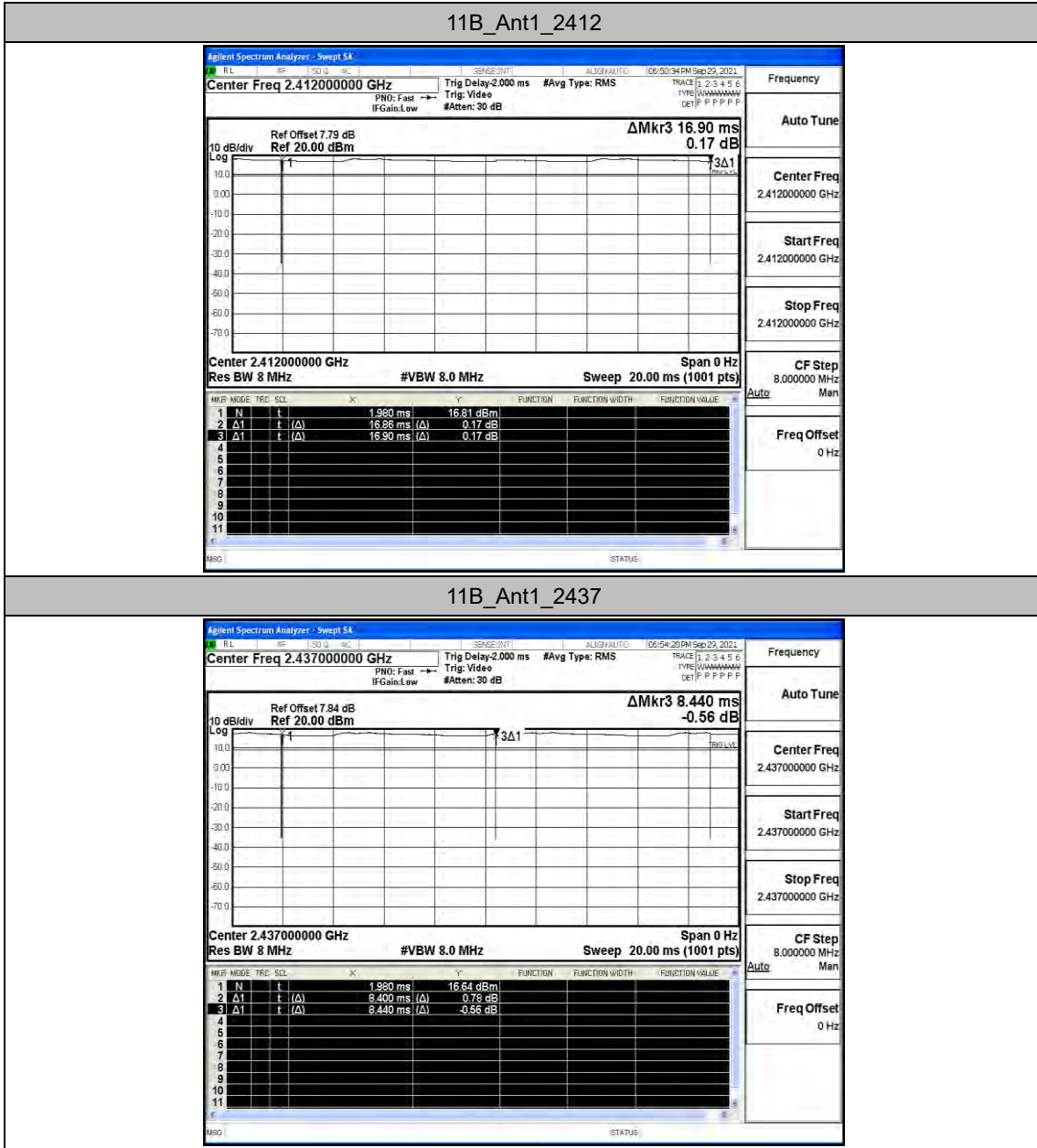
Test Result

ANT 1

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T VBW(KHz)	Verdict
11B	Ant1	2412	16.86	16.90	99.76	0.06	PASS
		2437	8.40	8.44	99.53	0.12	PASS
		2462	16.86	16.90	99.76	0.06	PASS
11G	Ant1	2412	1.39	1.43	97.20	0.72	PASS
		2437	1.39	1.43	97.20	0.72	PASS
		2462	1.39	1.43	97.20	0.72	PASS
11N20SISO	Ant1	2412	1.30	1.34	97.01	0.77	PASS
		2437	1.30	1.34	97.01	0.77	PASS
		2462	1.30	1.34	97.01	0.77	PASS
11N40SISO	Ant1	2422	0.64	0.68	94.12	1.56	PASS
		2437	0.64	0.68	94.12	1.56	PASS
		2452	0.64	0.68	94.12	1.56	PASS

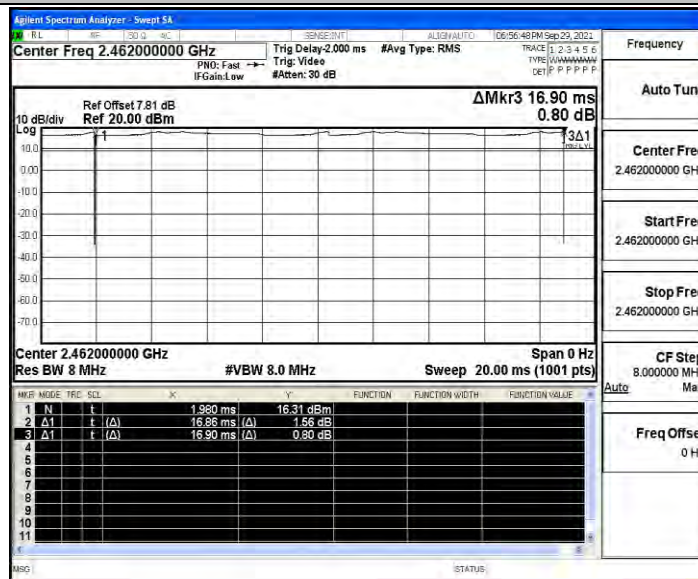


Test Graphs

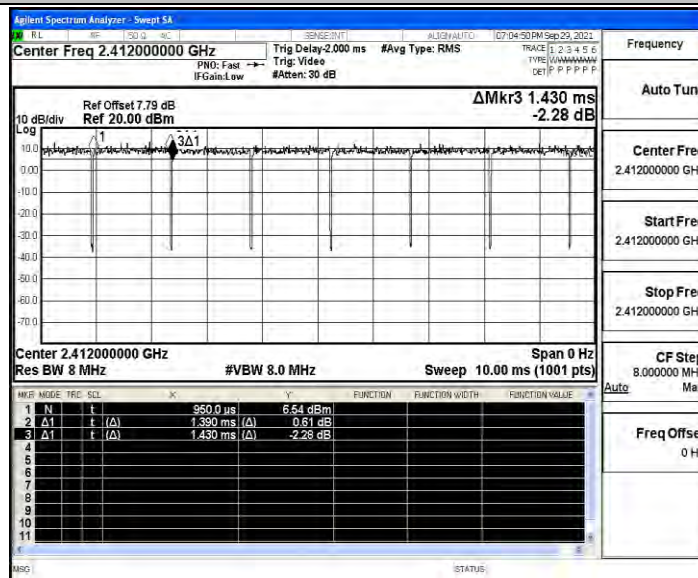




11B_Ant1_2462

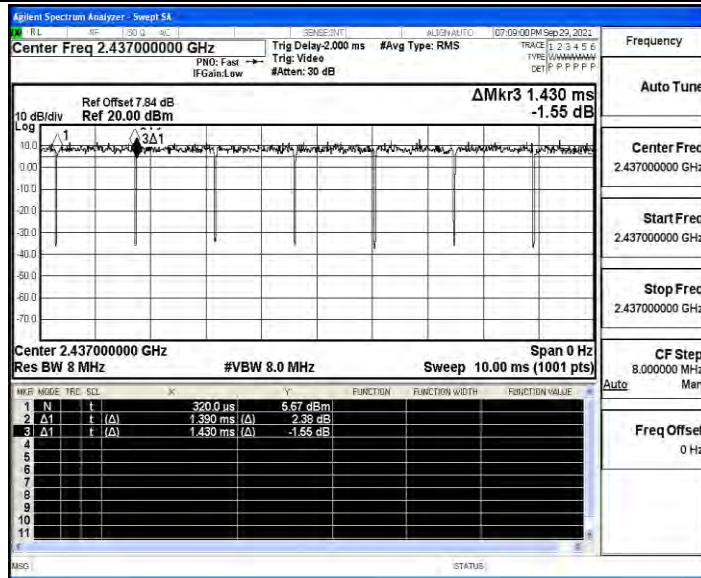


11G_Ant1_2412

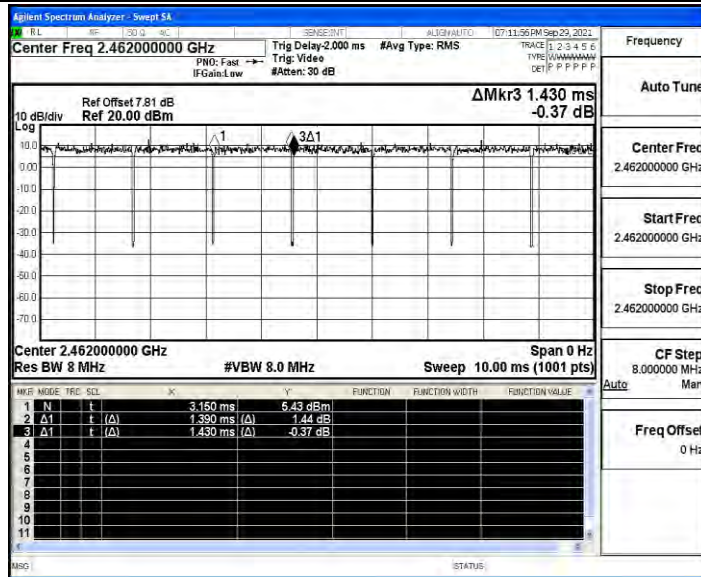




11G_Ant1_2437

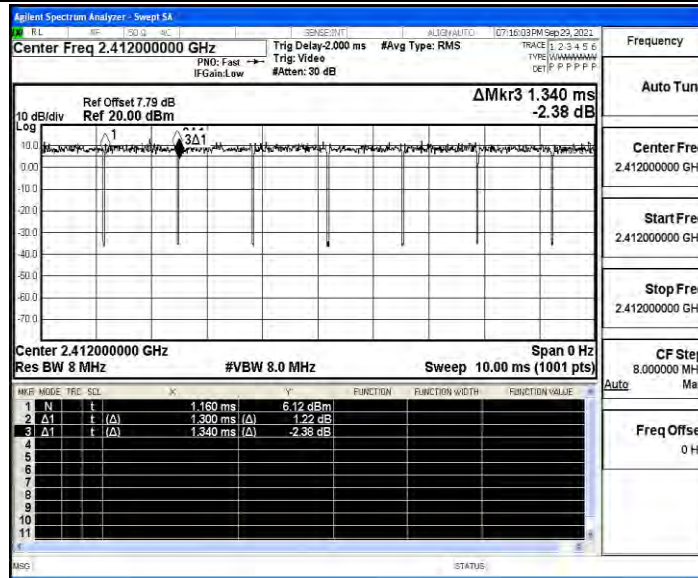


11G_Ant1_2462

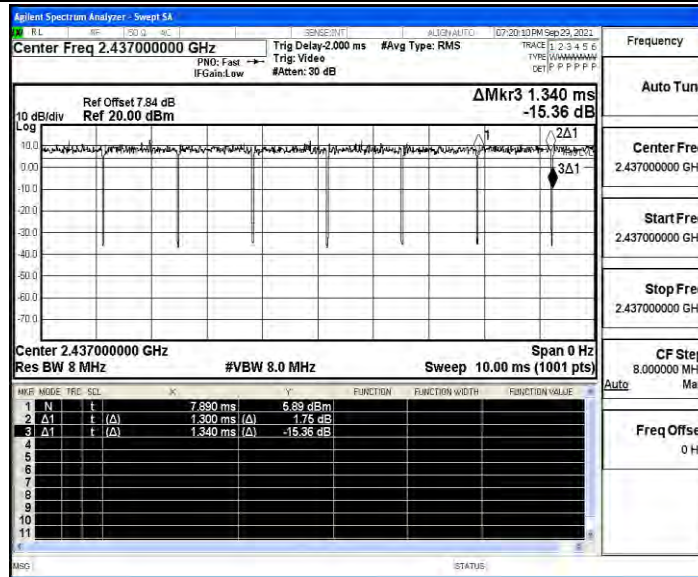




11N20SISO_Ant1_2412

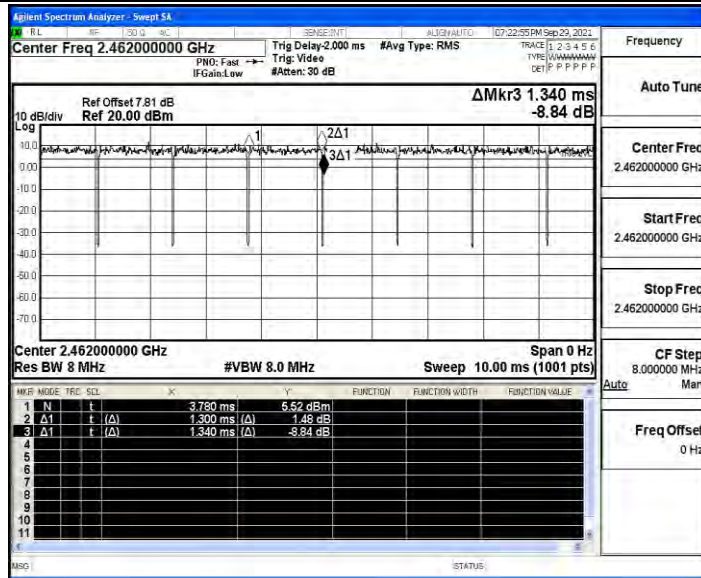


11N20SISO_Ant1_2437

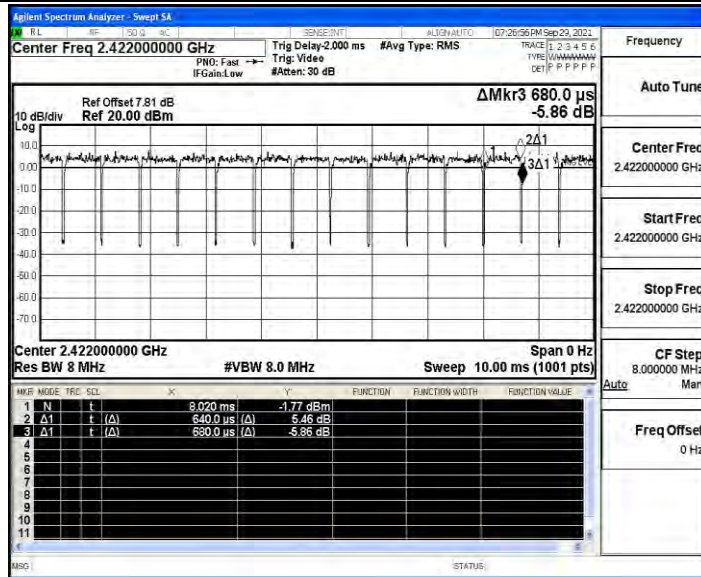




11N20SISO_Ant1_2462

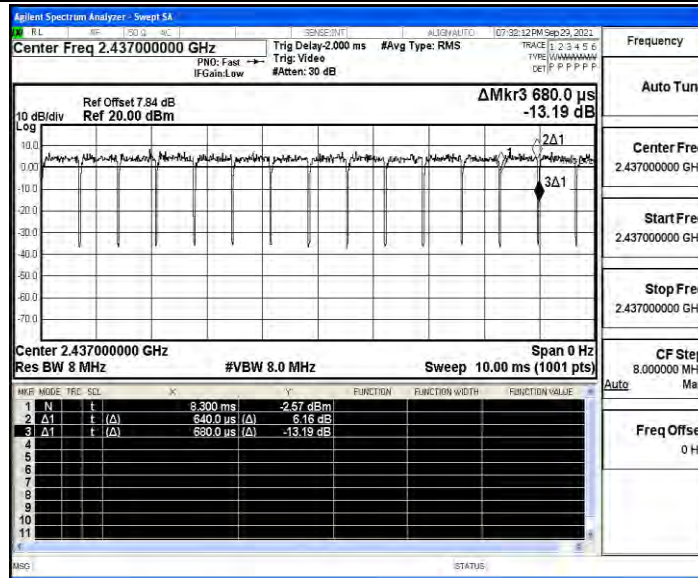


11N40SISO_Ant1_2422

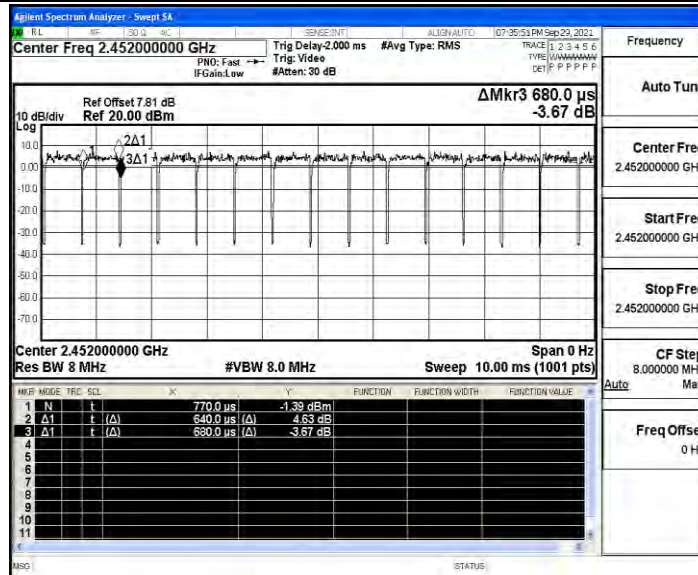




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



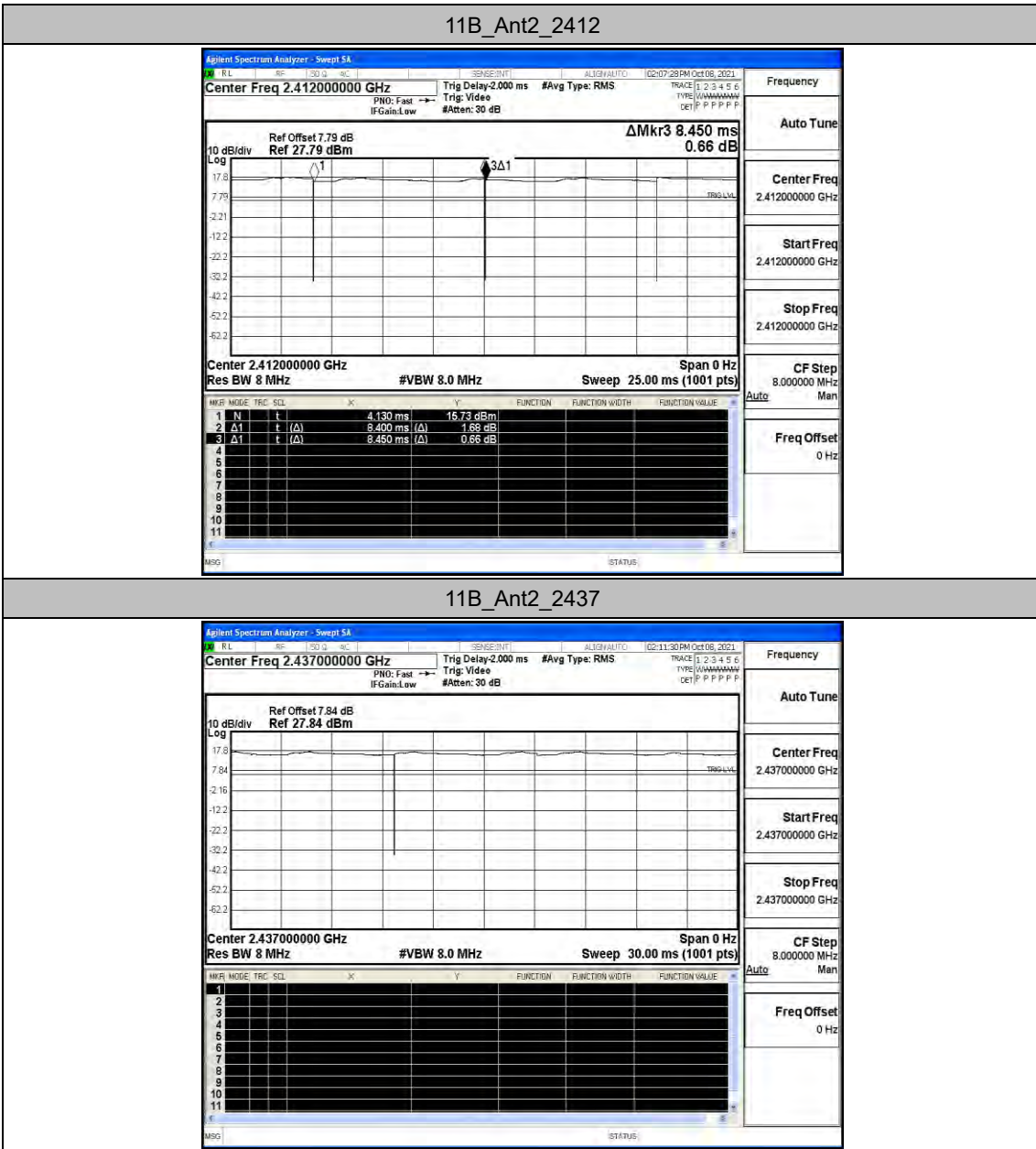


ANT 2

TestMode	Antenna	Channel	Transmission Duration [ms]	Transmission Period [ms]	Duty Cycle [%]	1/T VBW(KHz)	Verdict
11B	Ant2	2412	8.40	8.45	99.41	0.12	PASS
		2437	30.00	30.00	100.00	0.03	PASS
		2462	8.40	8.44	99.53	0.12	PASS
11G	Ant2	2412	1.39	1.43	97.20	0.72	PASS
		2437	1.39	1.43	97.20	0.72	PASS
		2462	1.39	1.43	97.20	0.72	PASS
11N20SISO	Ant2	2412	1.30	1.34	97.01	0.77	PASS
		2437	1.30	1.34	97.01	0.77	PASS
		2462	1.30	1.34	97.01	0.77	PASS
11N40SISO	Ant2	2422	0.64	0.69	92.75	1.56	PASS
		2437	0.64	0.69	92.75	1.56	PASS
		2452	0.64	0.68	94.12	1.56	PASS

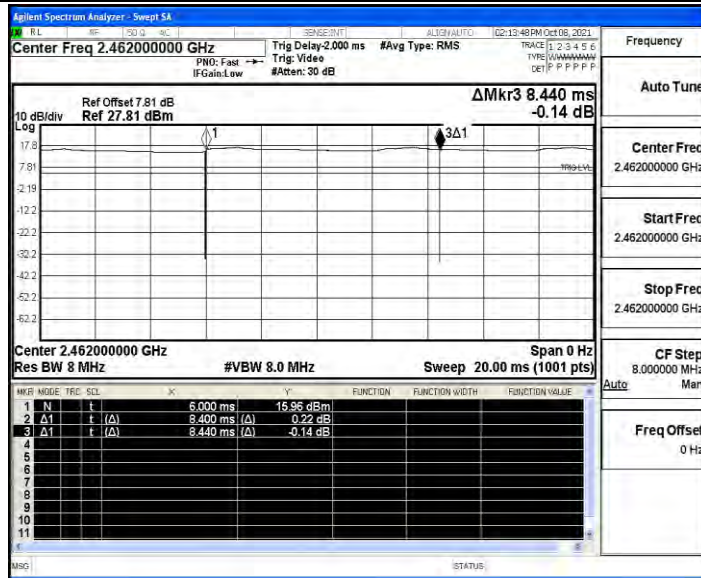


Test Graphs

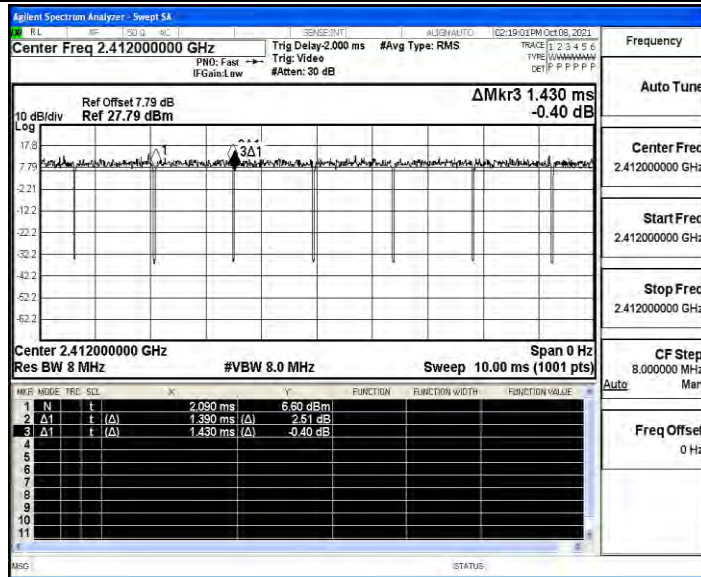




11B_Ant2_2462

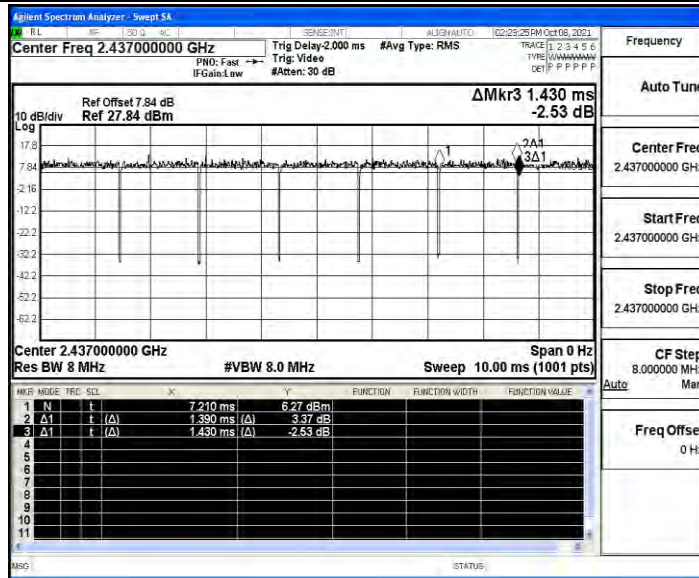


11G_Ant2_2412

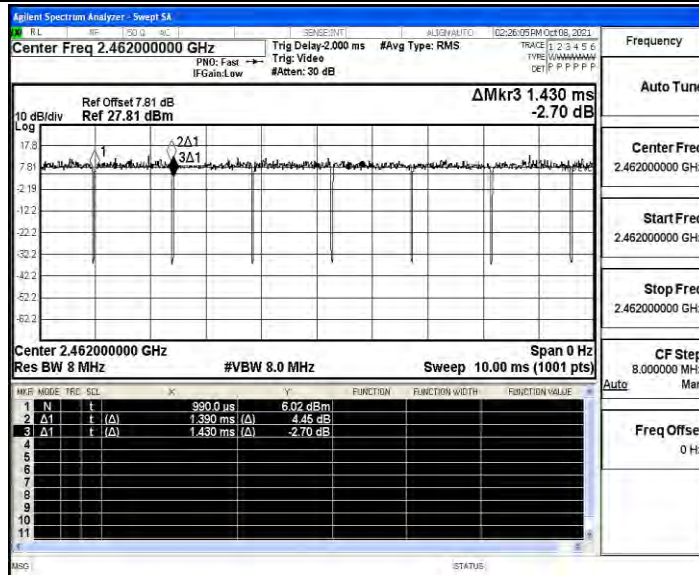




11G_Ant2_2437

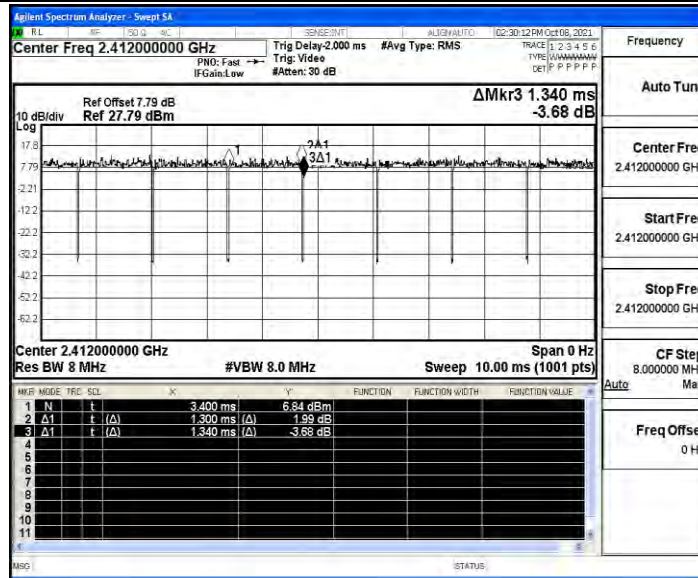


11G_Ant2_2462

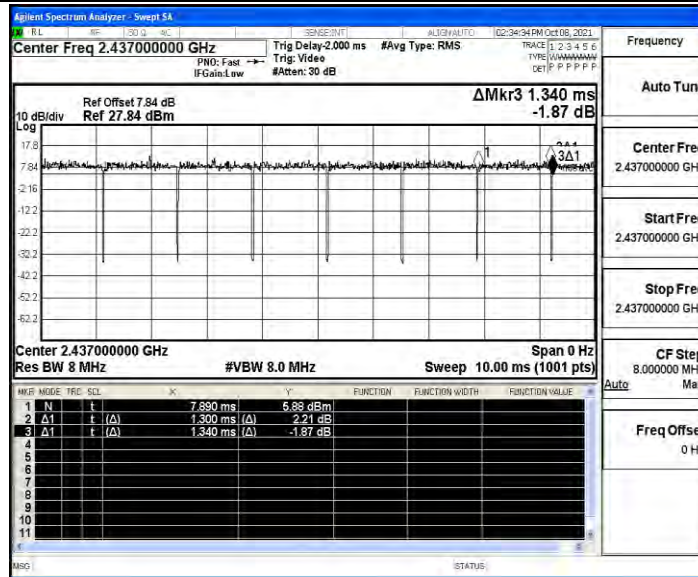




11N20SISO_Ant2_2412

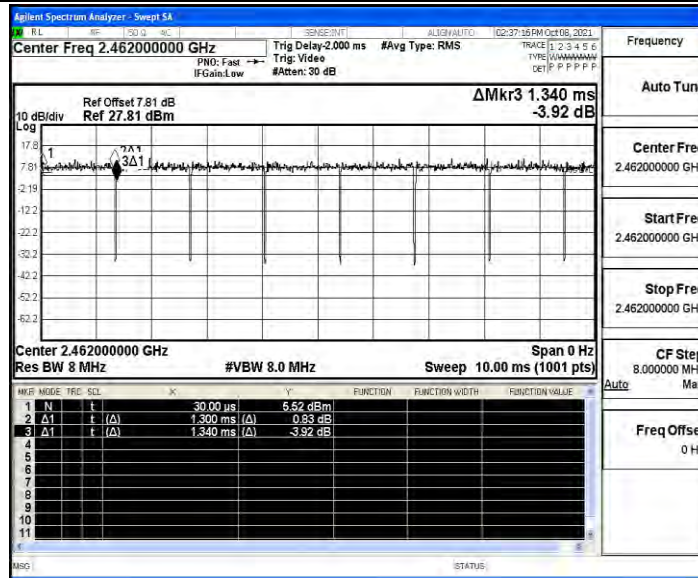


11N20SISO_Ant2_2437

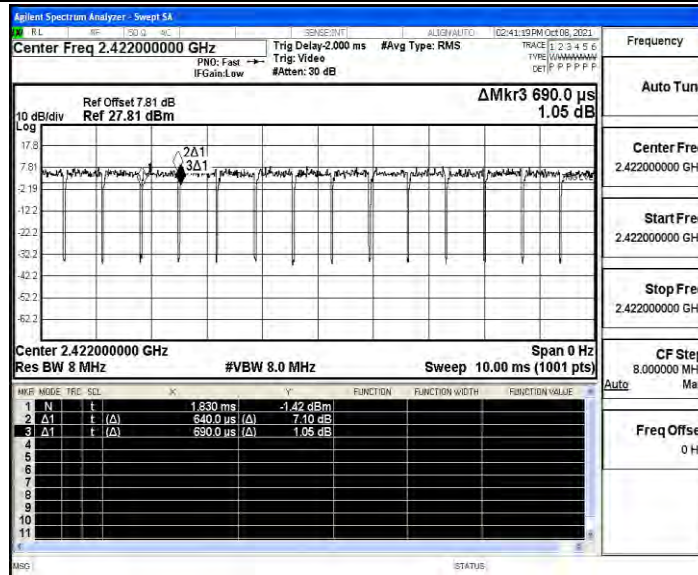




11N20SISO_Ant2_2462

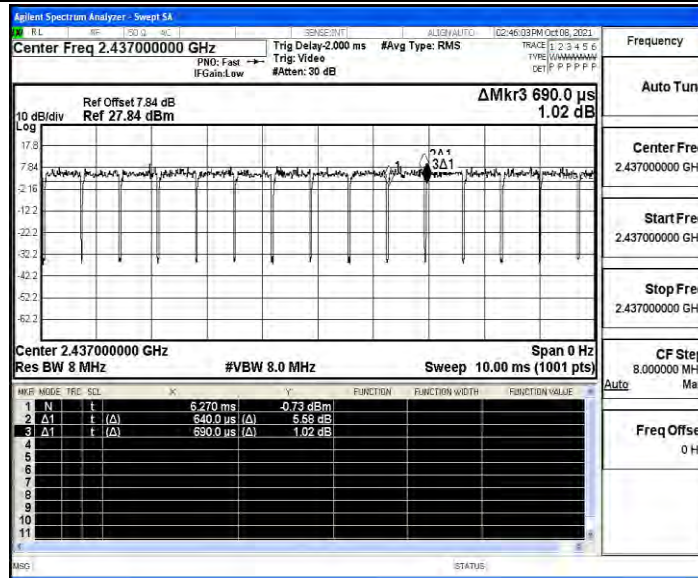


11N40SISO_Ant2_2422

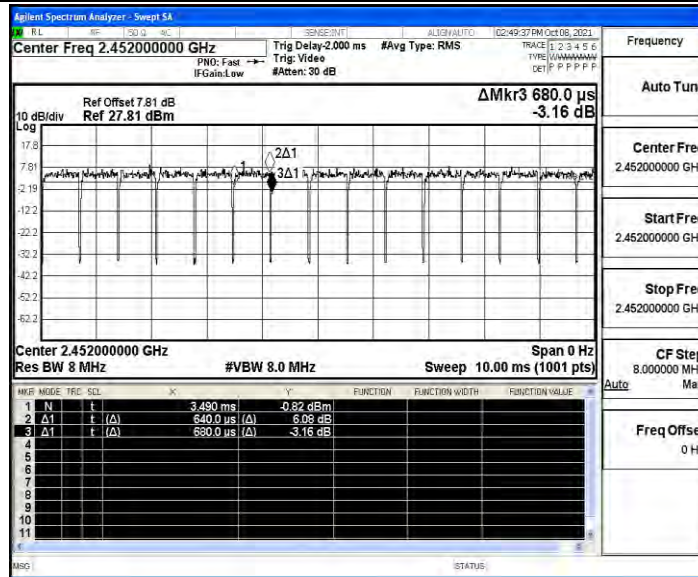




11N40SISO_Ant2_2437



11N40SISO_Ant2_2452





Appendix C.2: Maximum conducted output power

Test Result

ANT 1

TestMode	Antenna	Channel	Report Conducted Power(dBm)	Limit[dBm]	Verdict
11B	Ant1	2412	15.28	≤30	PASS
		2437	15.34	≤30	PASS
		2462	15.26	≤30	PASS
11G	Ant1	2412	11.77	≤30	PASS
		2437	11.05	≤30	PASS
		2462	10.87	≤30	PASS
11N20SISO	Ant1	2412	11.52	≤30	PASS
		2437	11.13	≤30	PASS
		2462	10.66	≤30	PASS
11N40SISO	Ant1	2422	11.00	≤30	PASS
		2437	11.14	≤30	PASS
		2452	11.43	≤30	PASS

ANT 2

TestMode	Antenna	Channel	Report Conducted Power(dBm)	Limit[dBm]	Verdict
11B	Ant2	2412	15.86	≤30	PASS
		2437	15.14	≤30	PASS
		2462	14.83	≤30	PASS
11G	Ant2	2412	12.48	≤30	PASS
		2437	11.91	≤30	PASS
		2462	11.42	≤30	PASS
11N20SISO	Ant2	2412	12.44	≤30	PASS
		2437	11.53	≤30	PASS
		2462	11.03	≤30	PASS
11N40SISO	Ant2	2422	12.01	≤30	PASS
		2437	12.14	≤30	PASS
		2452	11.67	≤30	PASS



MIMO

TestMode	Channel	Meas.Level [dBm]			Limit[dBm]	Verdict
		Ant 1	Ant 2	Sum		
11N20SISO	2412	11.52	12.44	15.01	29.99	PASS
	2437	11.13	11.53	14.34	29.99	PASS
	2462	10.66	11.03	13.86	29.99	PASS
11N40SISO	2422	11.0	12.01	14.54	29.99	PASS
	2437	11.14	12.14	14.68	29.99	PASS
	2452	11.43	11.67	14.56	29.99	PASS



Appendix C.3: Maximum power spectral density

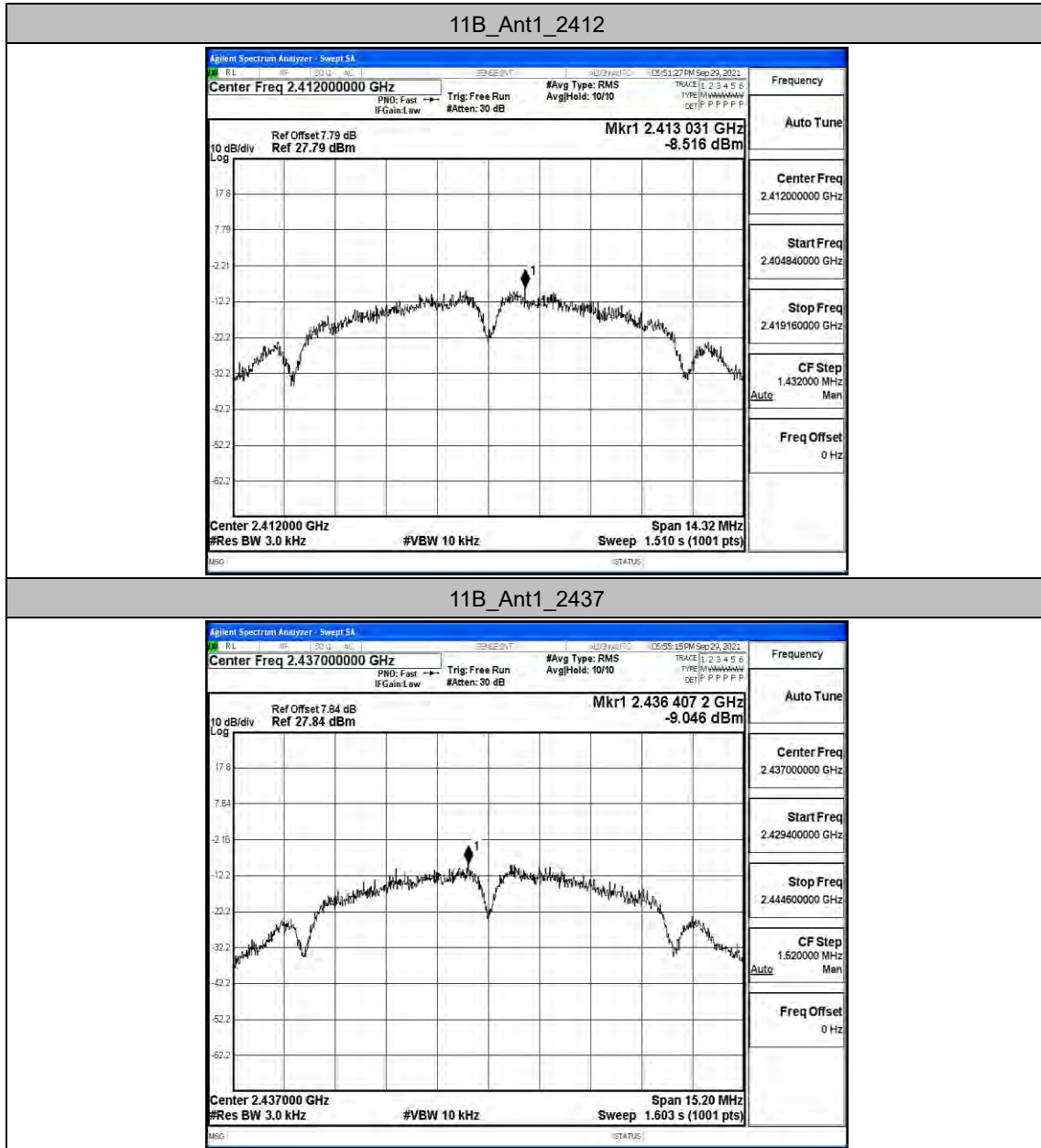
Test Result

ANT 1

TestMode	Antenna	Channel	Report power spectral density [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant1	2412	-8.52	≤8.0	PASS
		2437	-9.05	≤8.0	PASS
		2462	-9.26	≤8.0	PASS
11G	Ant1	2412	-19.67	≤8.0	PASS
		2437	-20.64	≤8.0	PASS
		2462	-20.95	≤8.0	PASS
11N20SISO	Ant1	2412	-19.91	≤8.0	PASS
		2437	-19.94	≤8.0	PASS
		2462	-20.91	≤8.0	PASS
11N40SISO	Ant1	2422	-24.43	≤8.0	PASS
		2437	-24.21	≤8.0	PASS
		2452	-22.43	≤8.0	PASS

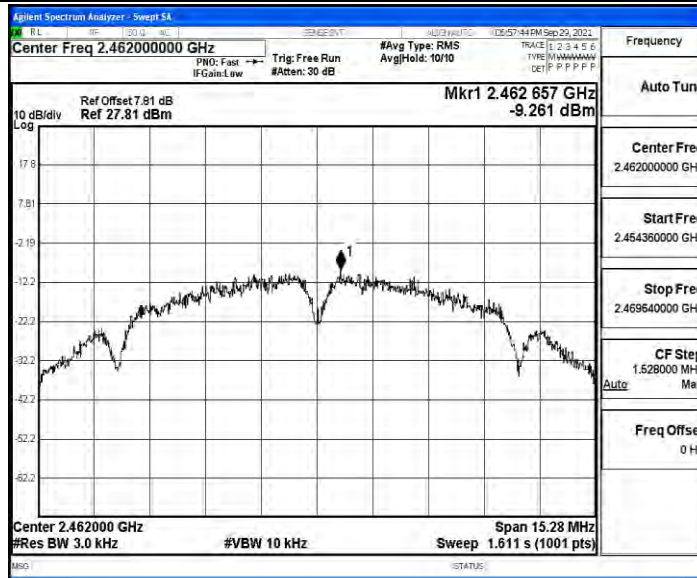


Test Graphs

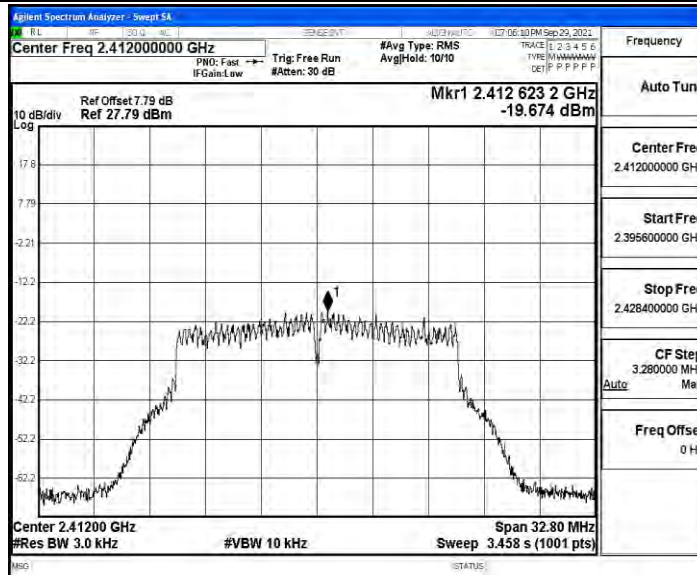




11B_Ant1_2462

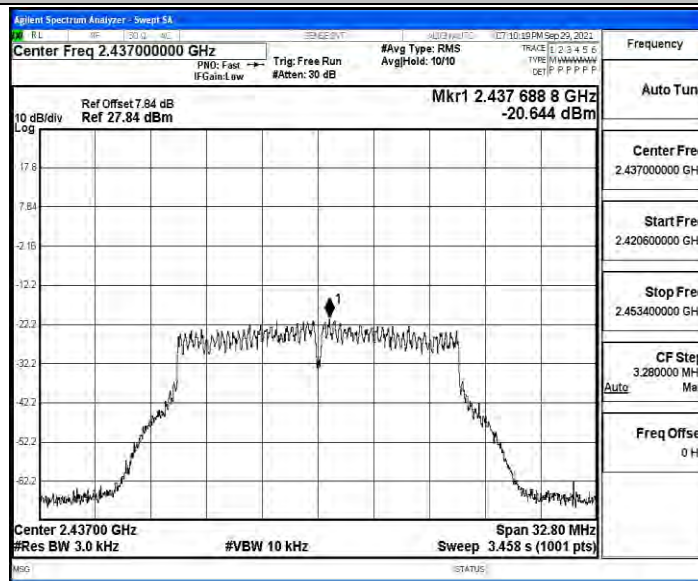


11G_Ant1_2412

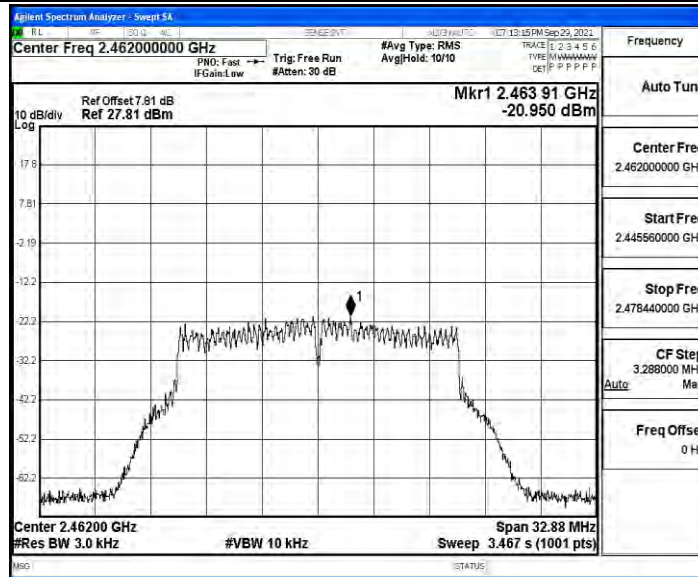




11G_Ant1_2437

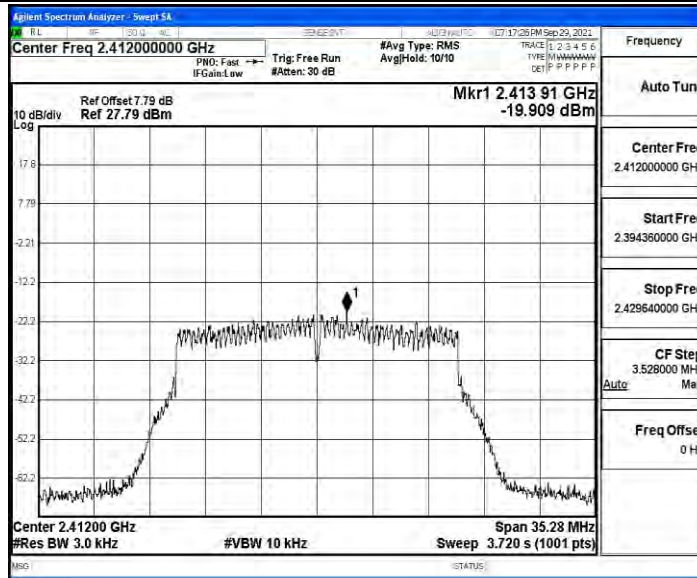


11G_Ant1_2462

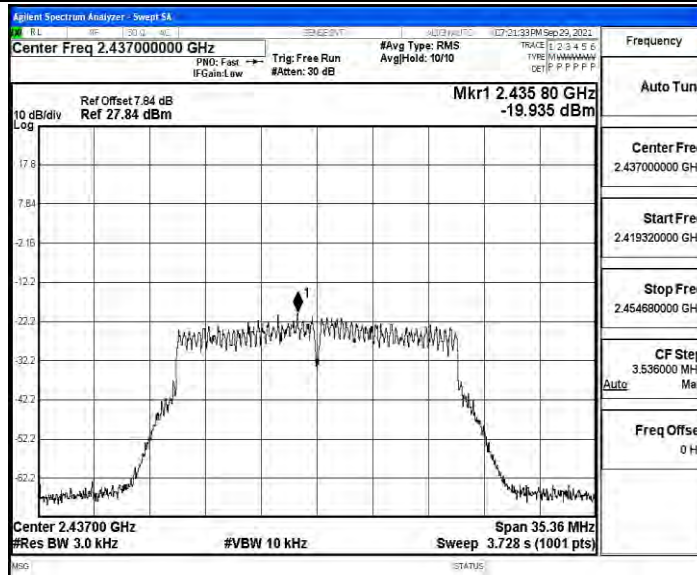




11N20SISO_Ant1_2412

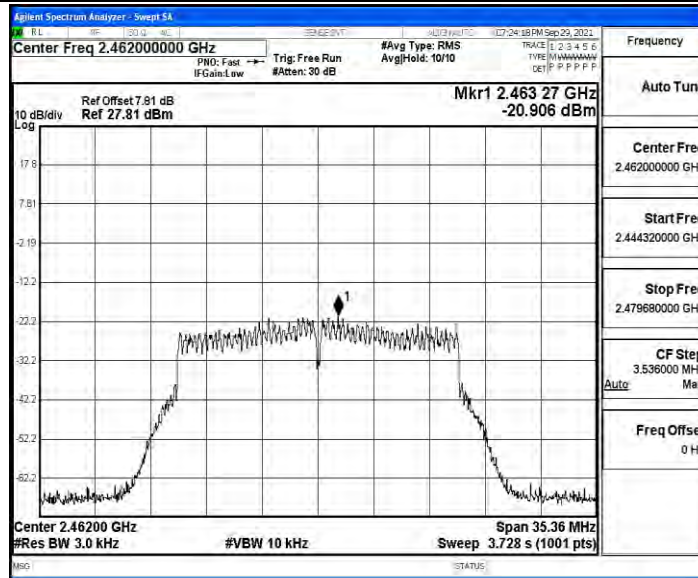


11N20SISO_Ant1_2437

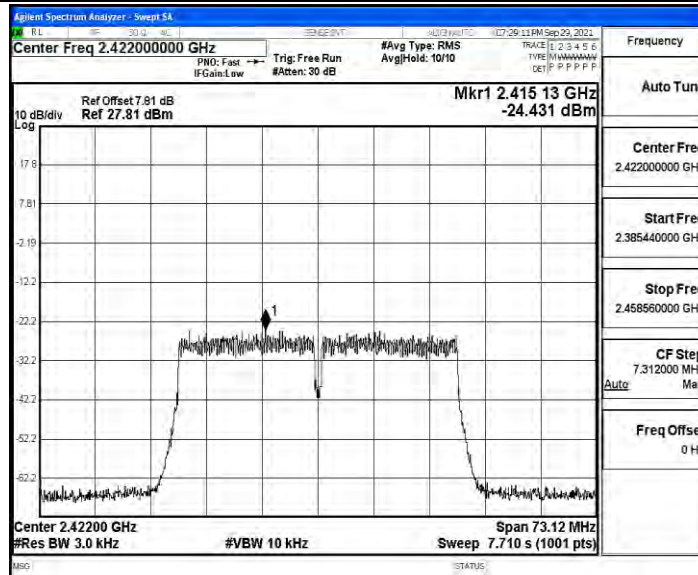




11N20SISO_Ant1_2462

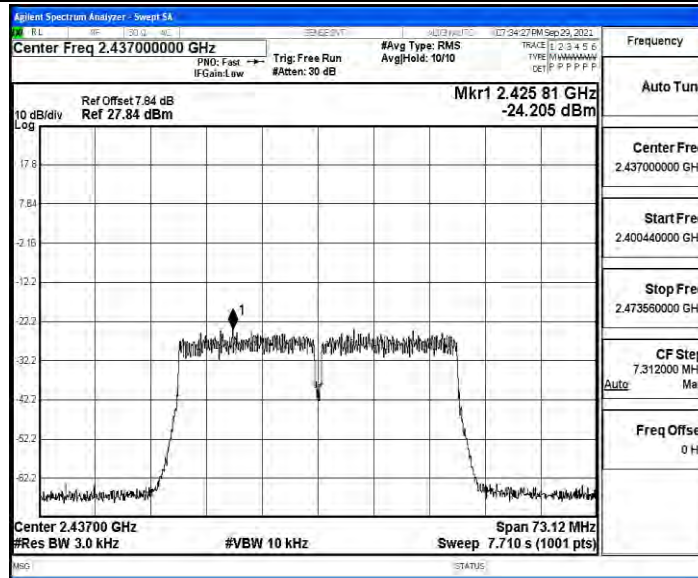


11N40SISO_Ant1_2422

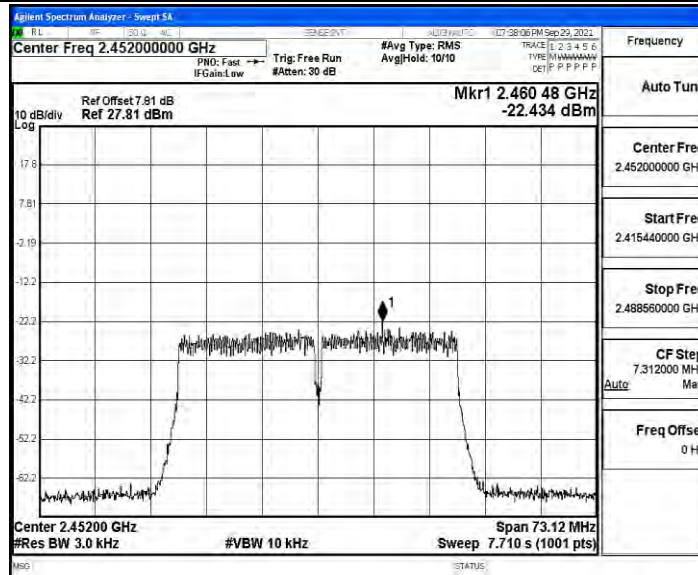




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452





ANT 2

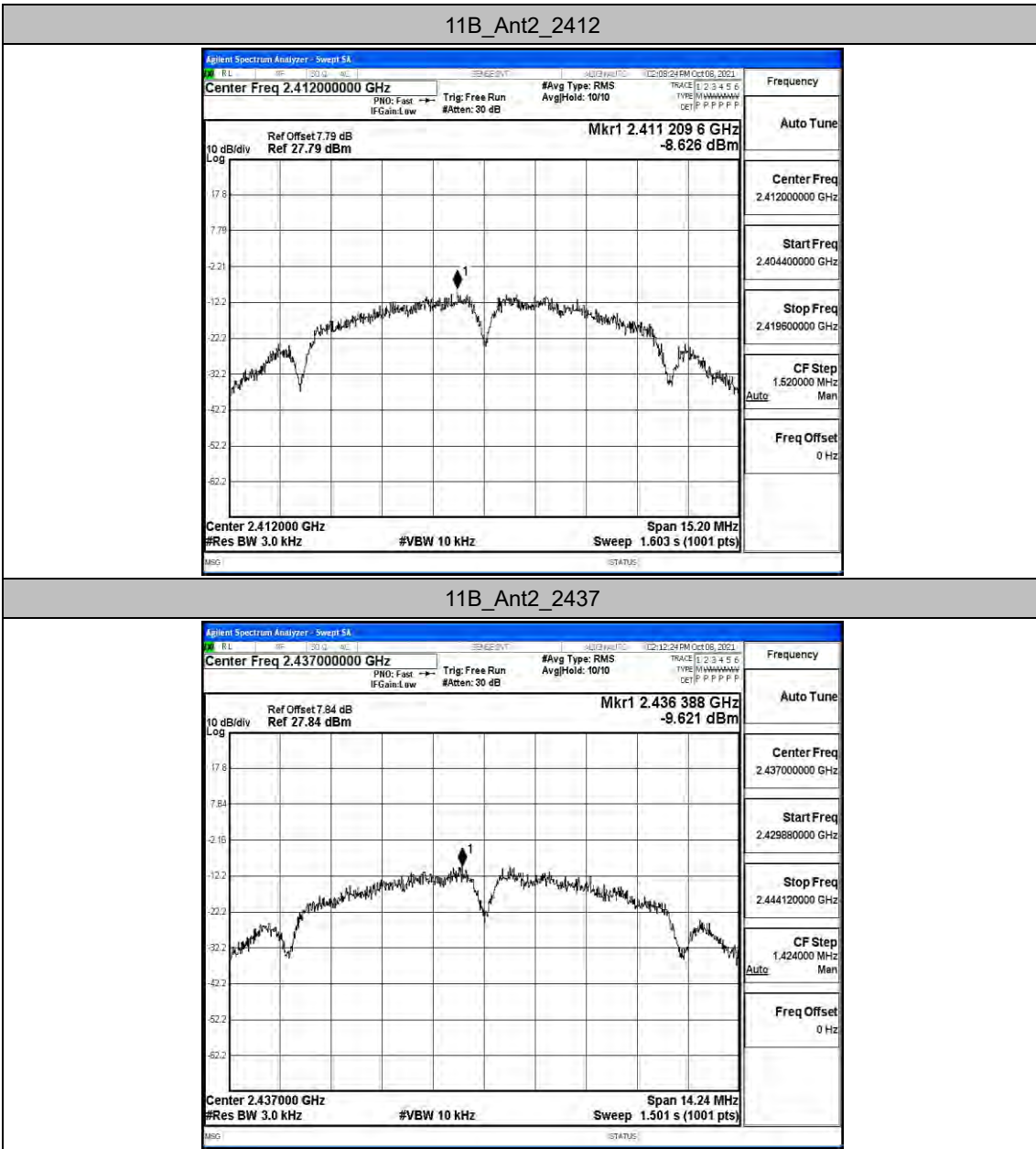
TestMode	Antenna	Channel	Report power spectral density [dBm/3kHz]	Limit[dBm/3kHz]	Verdict
11B	Ant2	2412	-8.63	≤8	PASS
		2437	-9.62	≤8	PASS
		2462	-10.42	≤8	PASS
11G	Ant2	2412	-19.17	≤8	PASS
		2437	-19.88	≤8	PASS
		2462	-19.96	≤8	PASS
11N20SISO	Ant2	2412	-18.77	≤8	PASS
		2437	-20.21	≤8	PASS
		2462	-20.38	≤8	PASS
11N40SISO	Ant2	2422	-23.25	≤8	PASS
		2437	-22.61	≤8	PASS
		2452	-24.06	≤8	PASS

MIMO

TestMode	Channel	Report power spectral density [dBm/3kHz]			Limit[dBm/3kHz]	Verdict
		Ant 1	Ant 2	Sum		
11N20SISO	2412	-19.91	-18.77	-16.29	≤7.99	PASS
	2437	-19.94	-20.21	-17.06	≤7.99	PASS
	2462	-20.91	-20.38	-17.63	≤7.99	PASS
11N40SISO	2422	-24.43	-23.25	-20.79	≤7.99	PASS
	2437	-24.21	-22.61	-20.33	≤7.99	PASS
	2452	-22.43	-24.06	-20.16	≤7.99	PASS

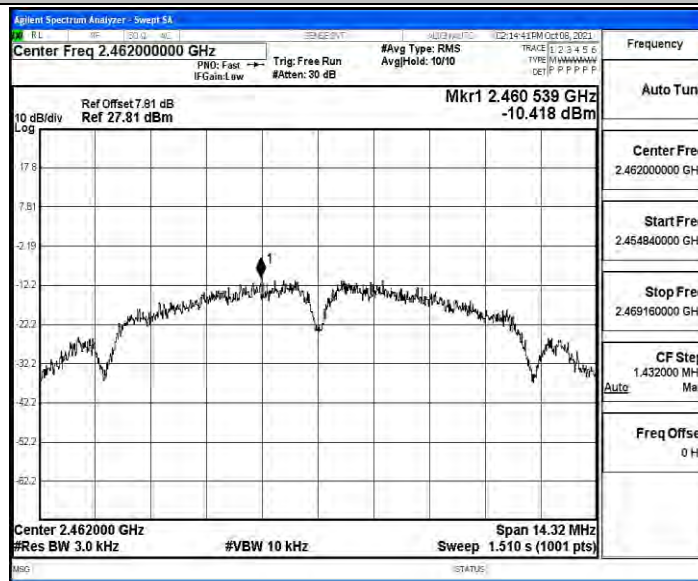


Test Graphs

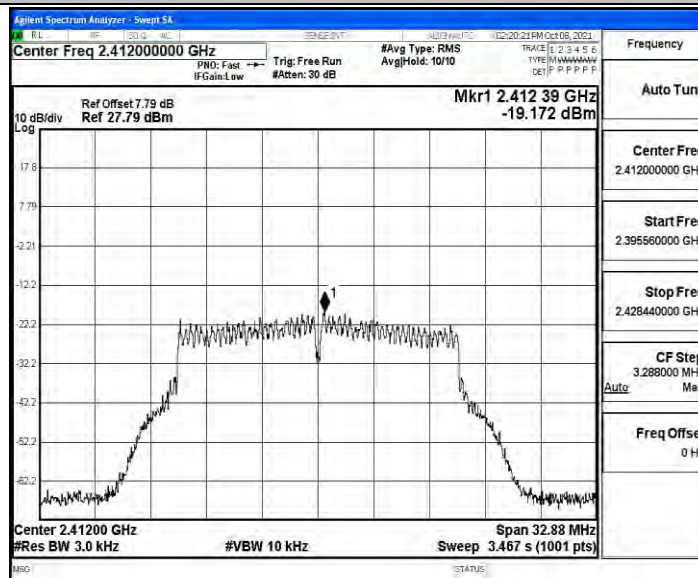




11B_Ant2_2462

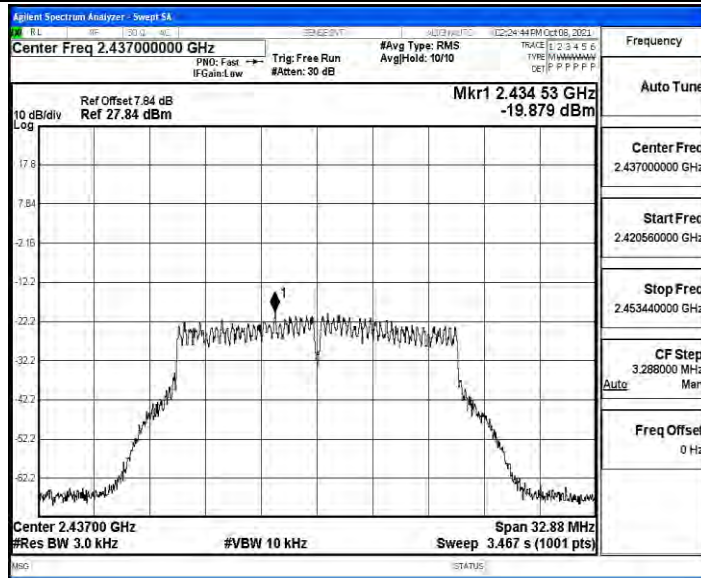


11G_Ant2_2412

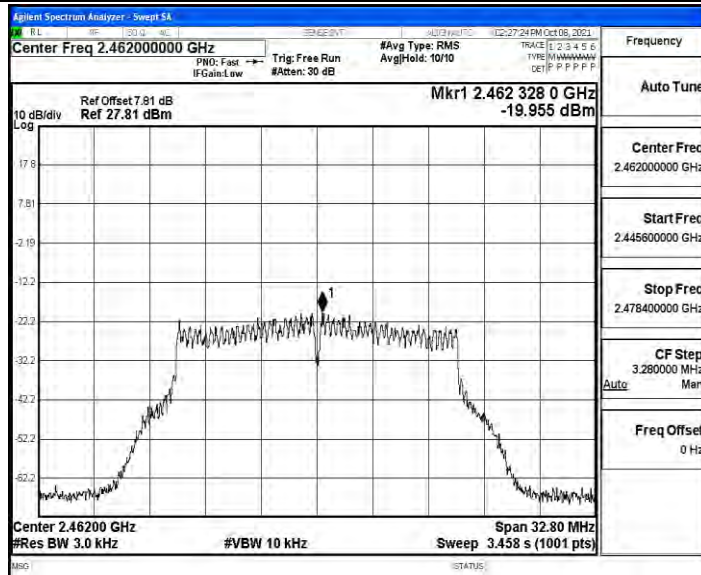




11G_Ant2_2437

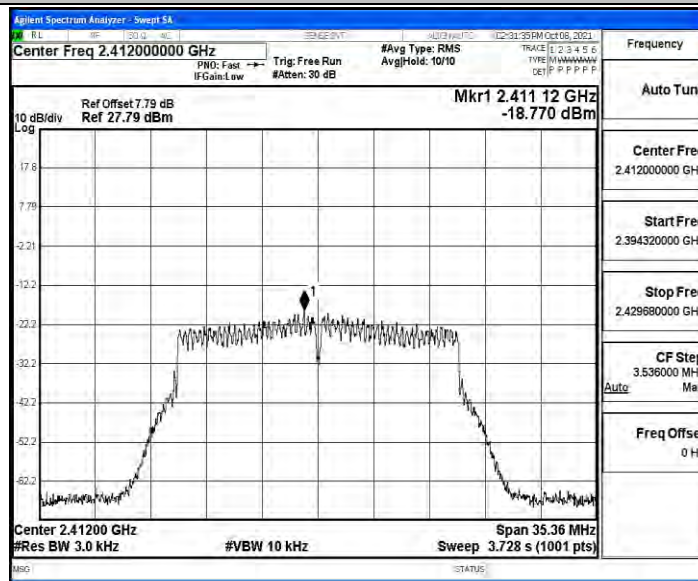


11G_Ant2_2462

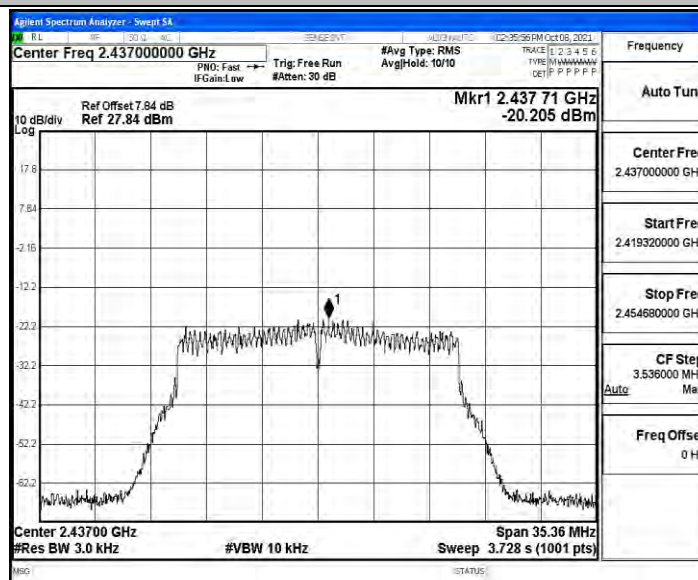




11N20SISO_Ant2_2412

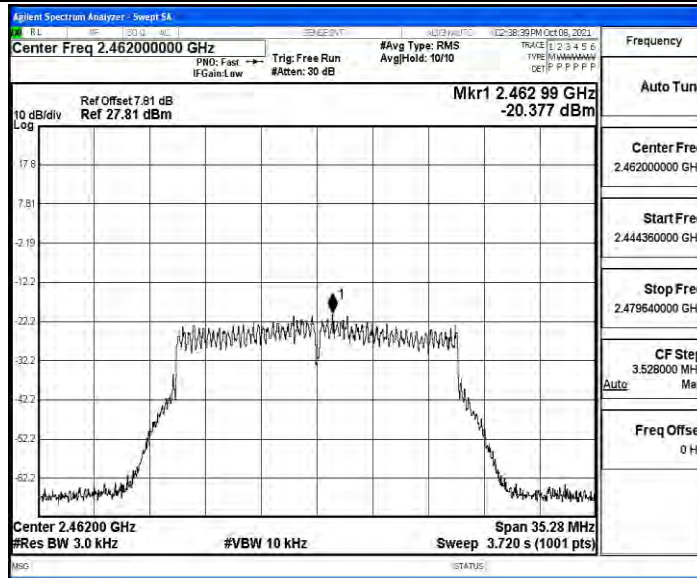


11N20SISO_Ant2_2437

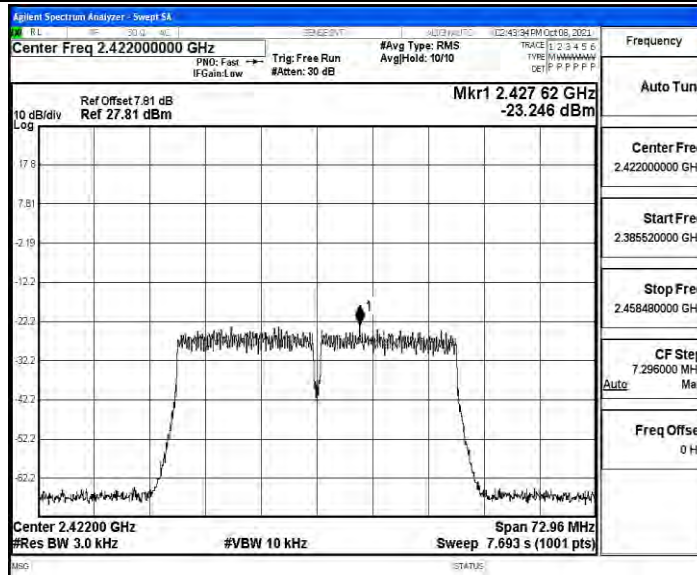




11N20SISO_Ant2_2462

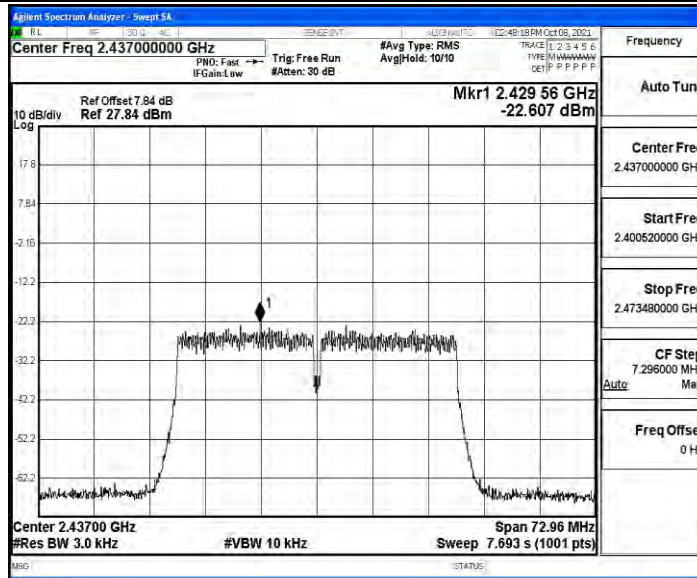


11N40SISO_Ant2_2422

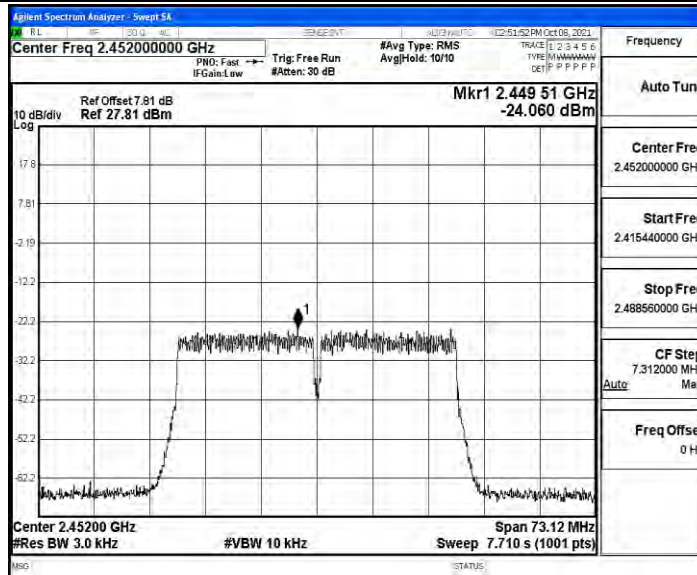




11N40SISO_Ant2_2437



11N40SISO_Ant2_2452





Appendix C.4.1: 6dB Bandwidth

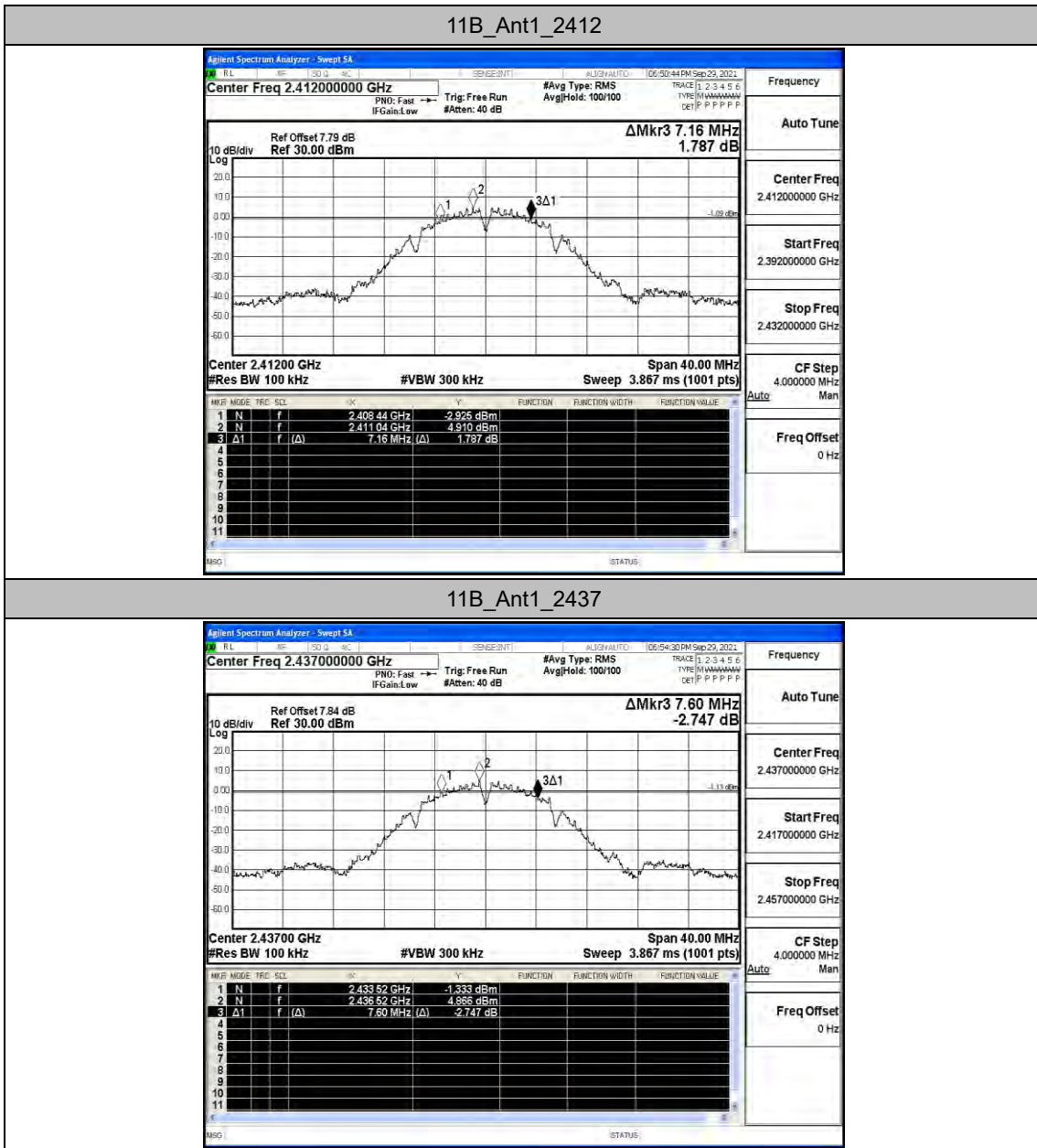
Test Result

ANT 1

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant1	2412	7.160	2408.440	2415.600	0.5	PASS
		2437	7.600	2433.520	2441.120	0.5	PASS
		2462	7.640	2458.440	2466.080	0.5	PASS
11G	Ant1	2412	16.400	2403.840	2420.240	0.5	PASS
		2437	16.400	2428.840	2445.240	0.5	PASS
		2462	16.440	2453.800	2470.240	0.5	PASS
11N20SISO	Ant1	2412	17.640	2403.200	2420.840	0.5	PASS
		2437	17.680	2428.200	2445.880	0.5	PASS
		2462	17.680	2453.200	2470.880	0.5	PASS
11N40SISO	Ant1	2422	36.560	2403.760	2440.320	0.5	PASS
		2437	36.560	2418.760	2455.320	0.5	PASS
		2452	36.560	2433.760	2470.320	0.5	PASS

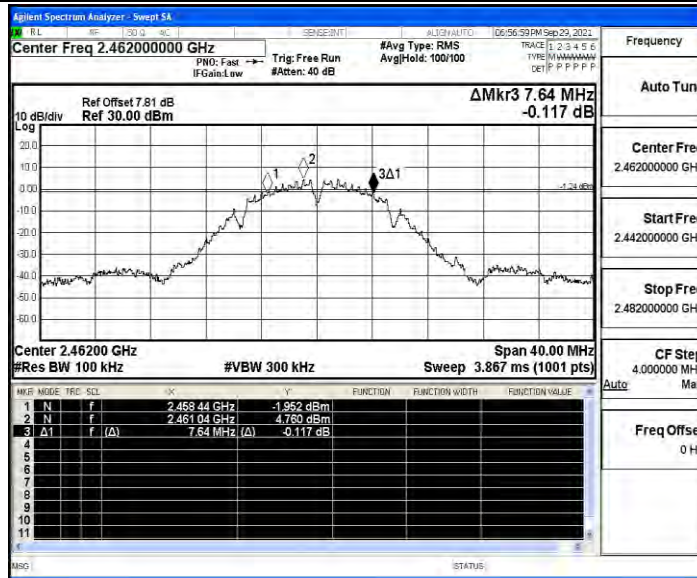


Test Graphs

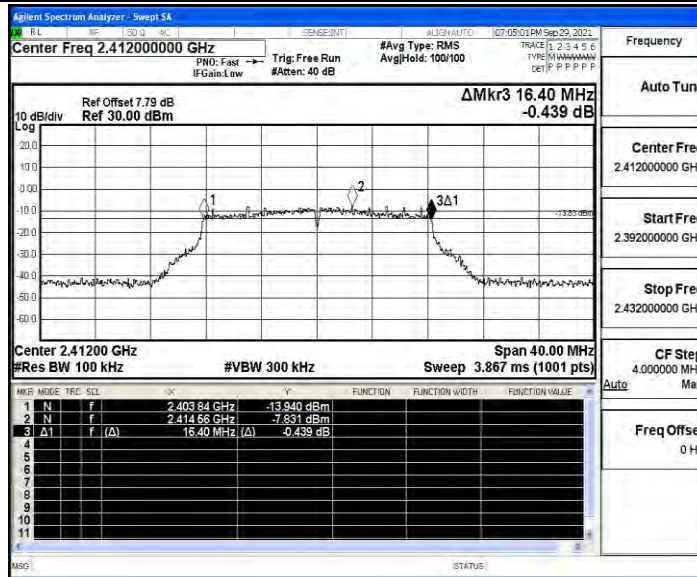




11B_Ant1_2462

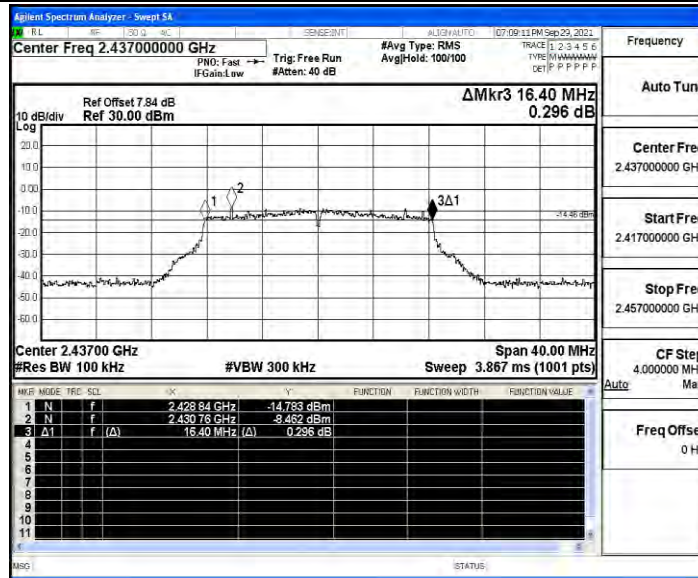


11G_Ant1_2412

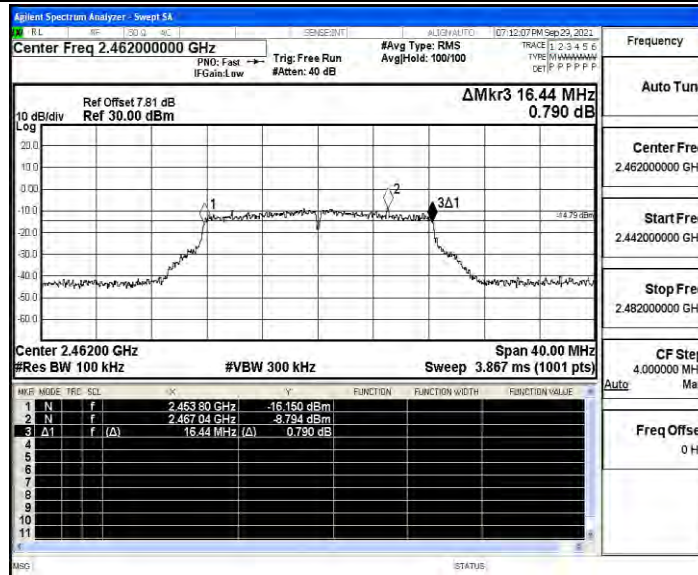




11G_Ant1_2437

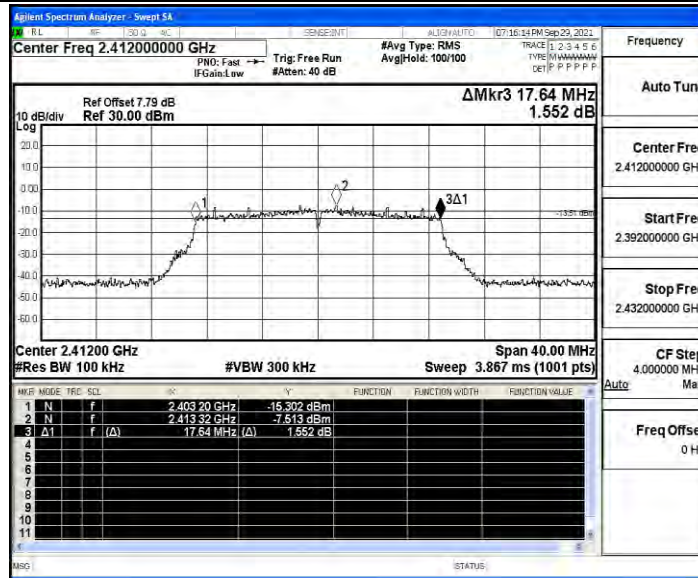


11G_Ant1_2462

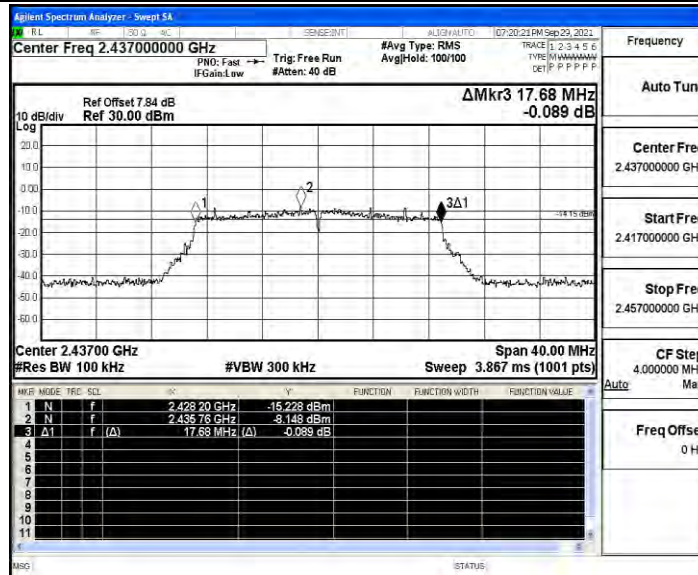




11N20SISO_Ant1_2412

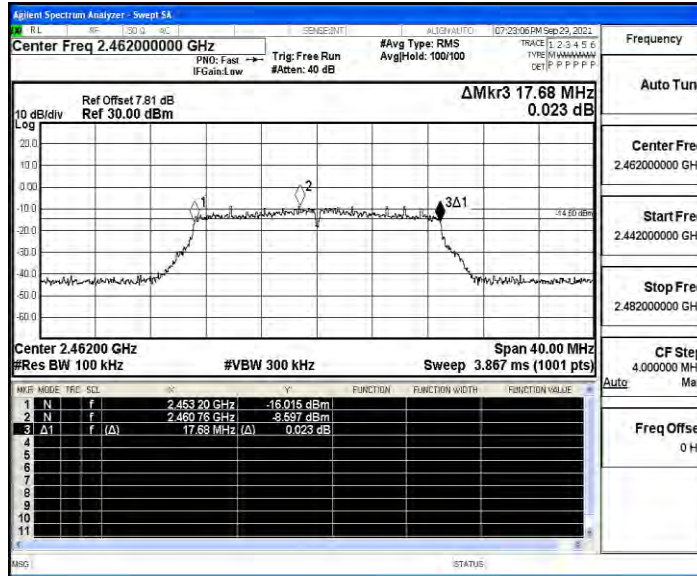


11N20SISO_Ant1_2437

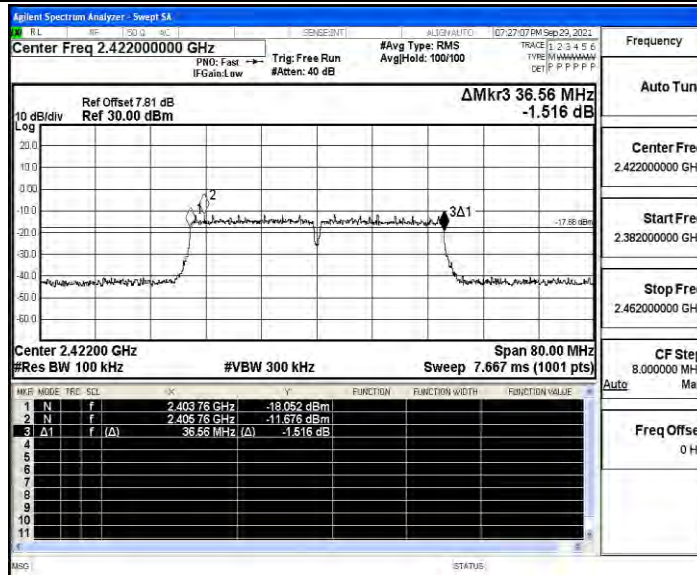




11N20SISO_Ant1_2462

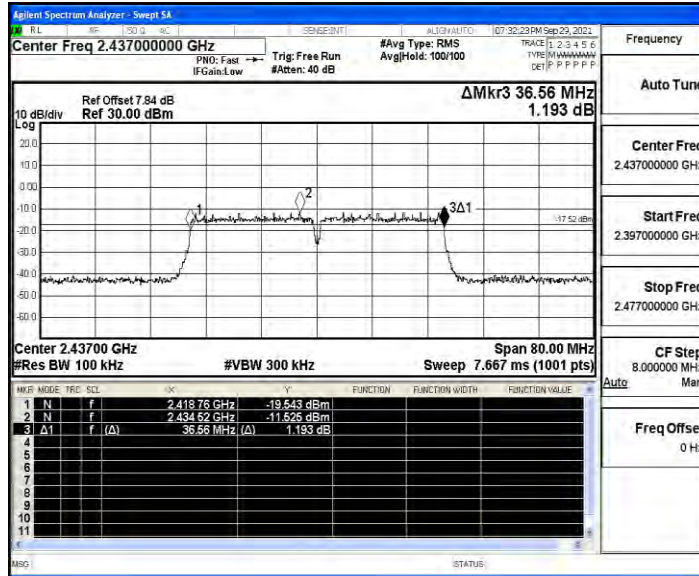


11N40SISO_Ant1_2422

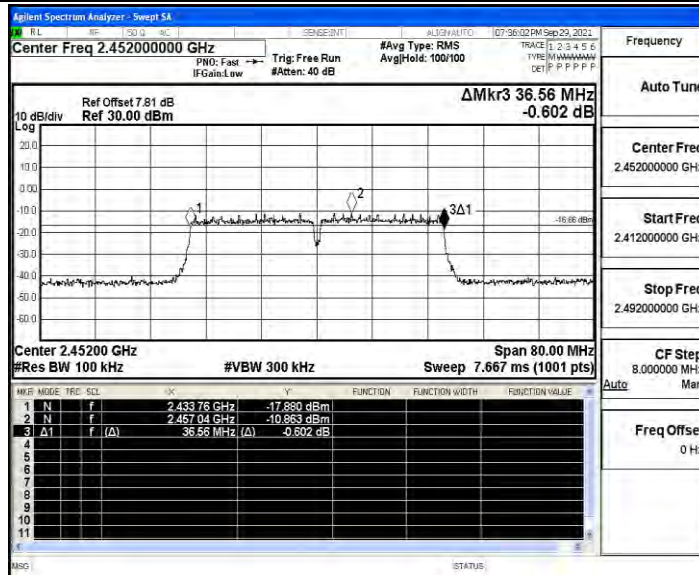




11N40SISO_Ant1_2437



11N40SISO_Ant1_2452



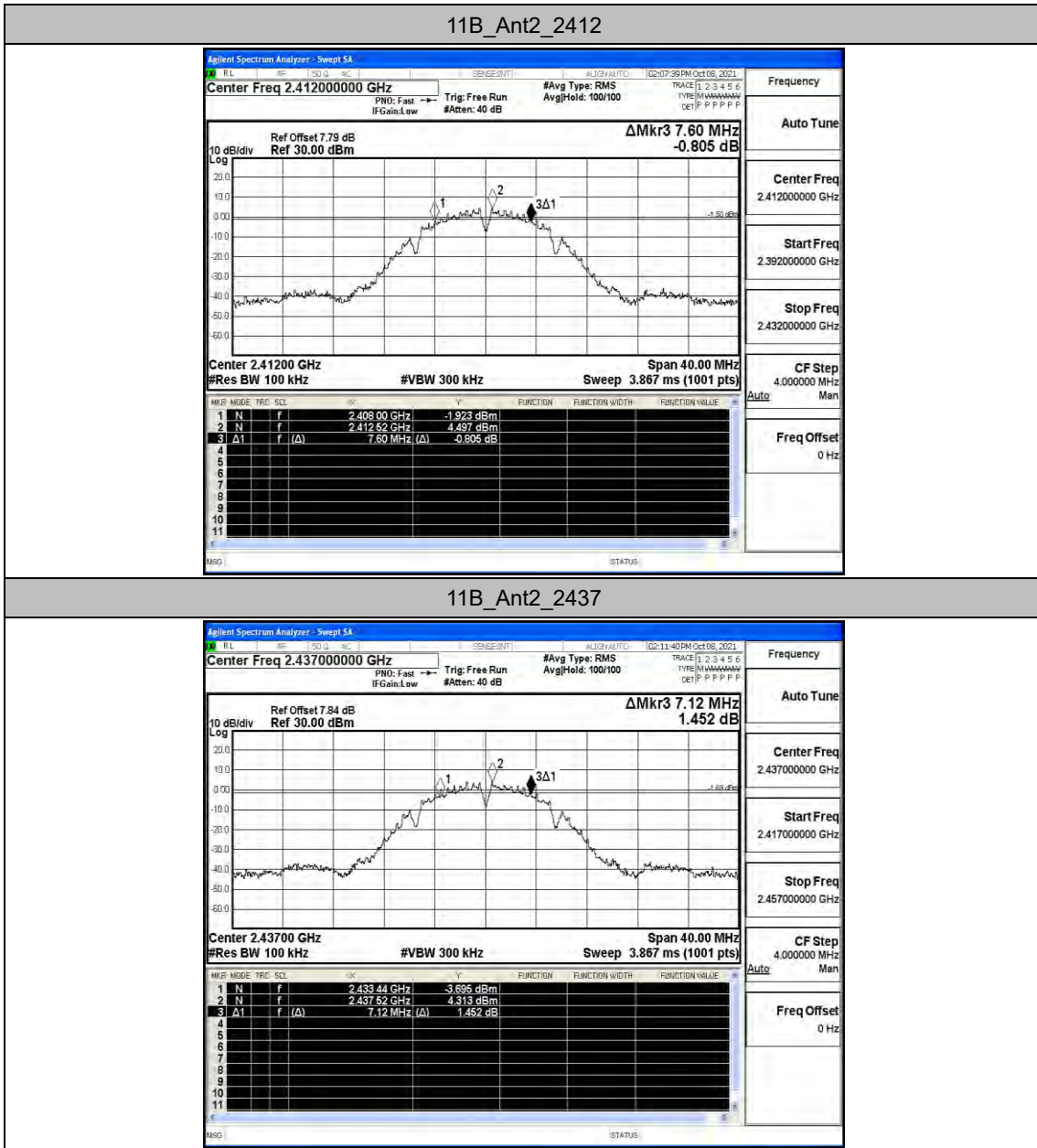


ANT 2

TestMode	Antenna	Channel	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
11B	Ant2	2412	7.600	2408.000	2415.600	0.5	PASS
		2437	7.120	2433.440	2440.560	0.5	PASS
		2462	7.160	2458.480	2465.640	0.5	PASS
11G	Ant2	2412	16.440	2403.800	2420.240	0.5	PASS
		2437	16.440	2428.800	2445.240	0.5	PASS
		2462	16.400	2453.840	2470.240	0.5	PASS
11N20SISO	Ant2	2412	17.680	2403.160	2420.840	0.5	PASS
		2437	17.680	2428.200	2445.880	0.5	PASS
		2462	17.640	2453.200	2470.840	0.5	PASS
11N40SISO	Ant2	2422	36.480	2403.760	2440.240	0.5	PASS
		2437	36.480	2418.760	2455.240	0.5	PASS
		2452	36.560	2433.760	2470.320	0.5	PASS



Test Graphs

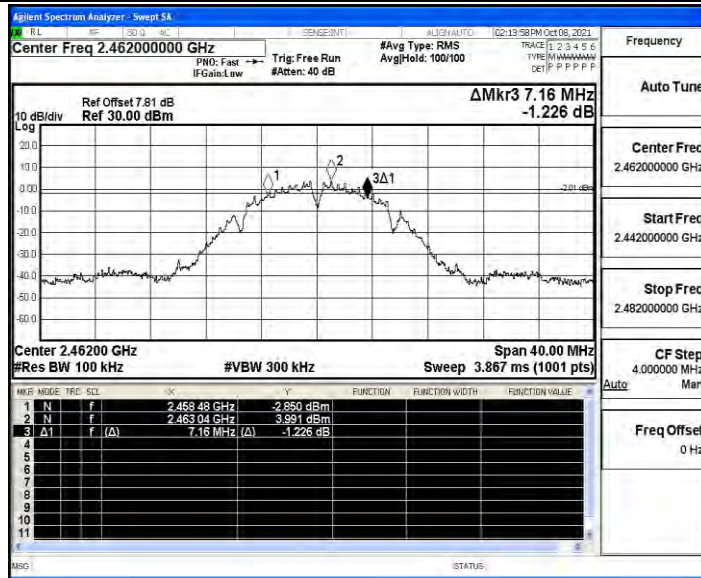

11B_Ant2_2437

Center Freq 2.437000000 GHz
#Res BW 100 kHz #VBW 300 kHz Sweep 3.867 ms (1001 pts)

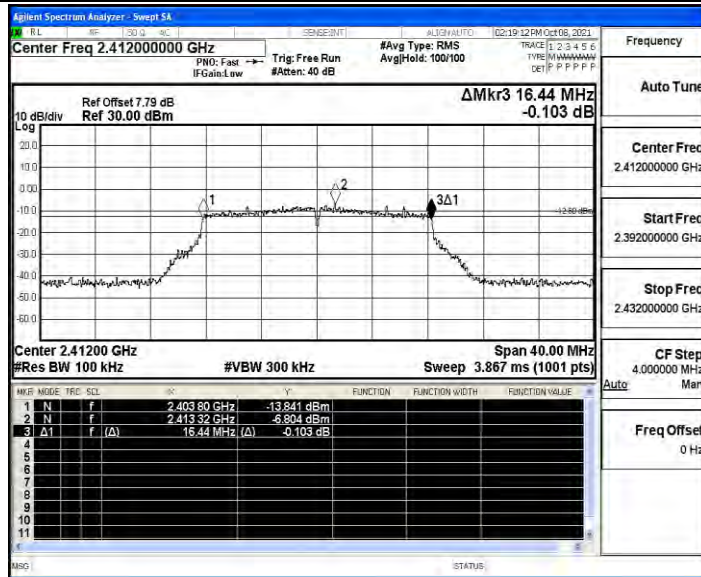
Frequency: Auto Tune
Center Freq: 2.437000000 GHz
Start Freq: 2.417000000 GHz
Stop Freq: 2.457000000 GHz
CF Step: 4.000000 MHz
Freq Offset: 0 Hz



11B_Ant2_2462

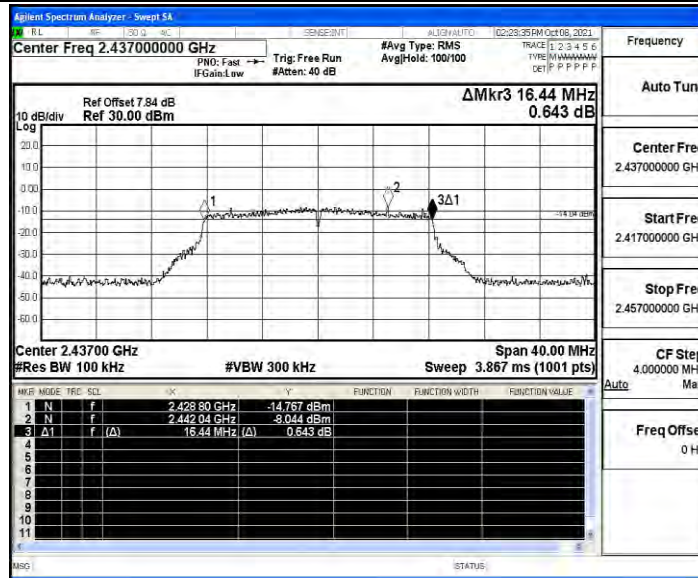


11G_Ant2_2412

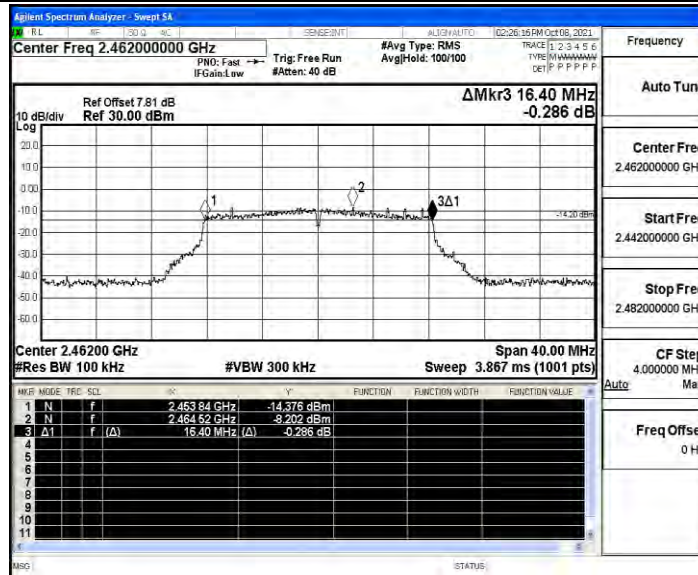




11G_Ant2_2437

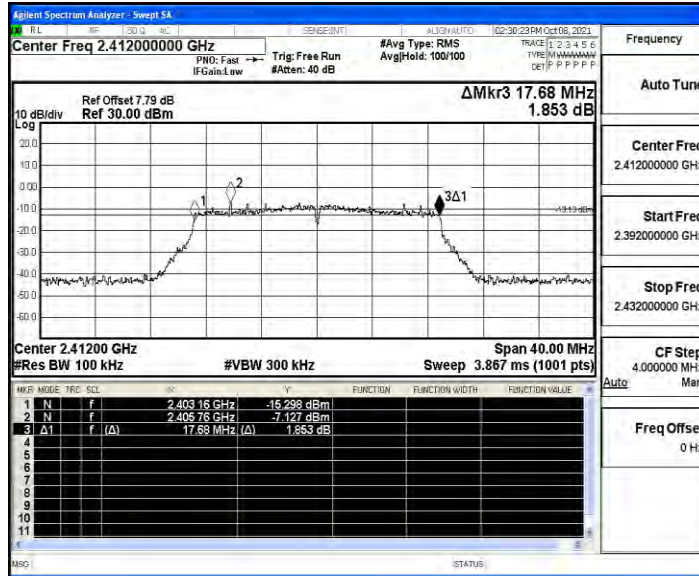


11G_Ant2_2462

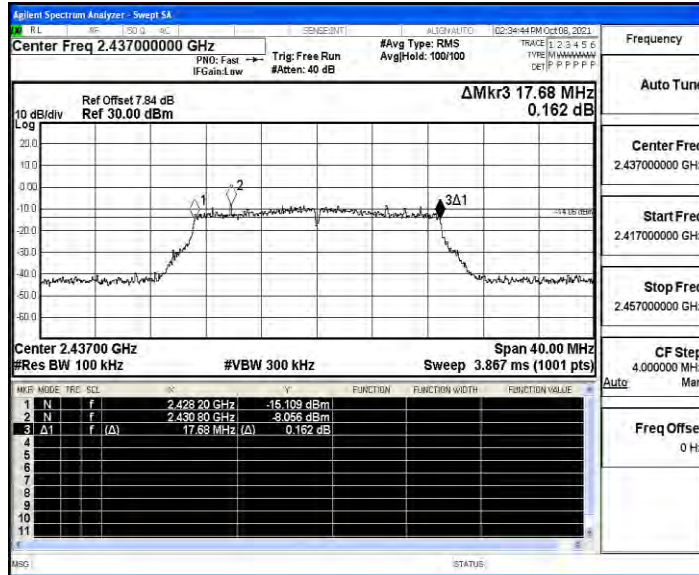




11N20SISO_Ant2_2412

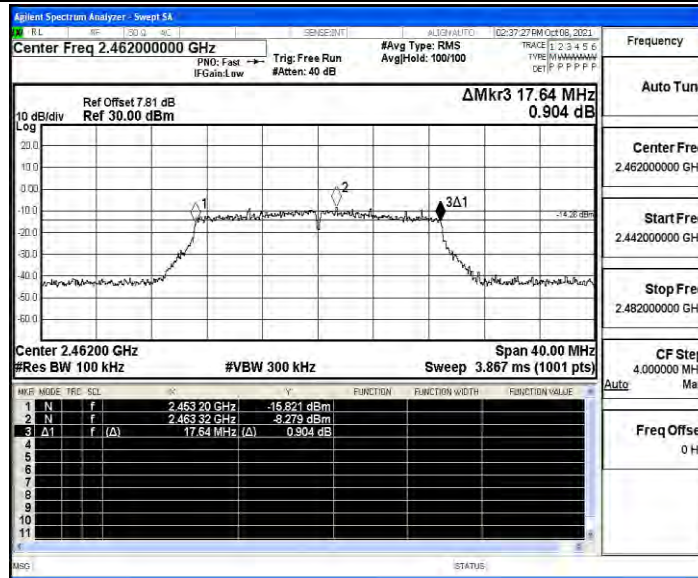


11N20SISO_Ant2_2437

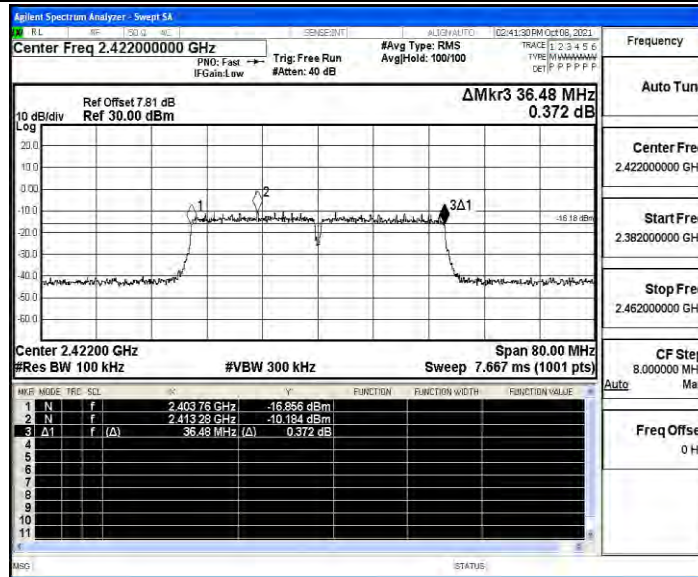




11N20SISO_Ant2_2462

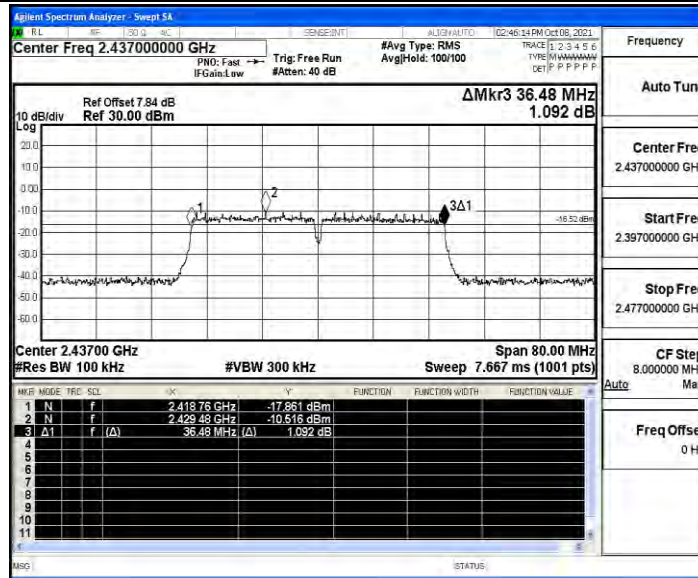


11N40SISO_Ant2_2422

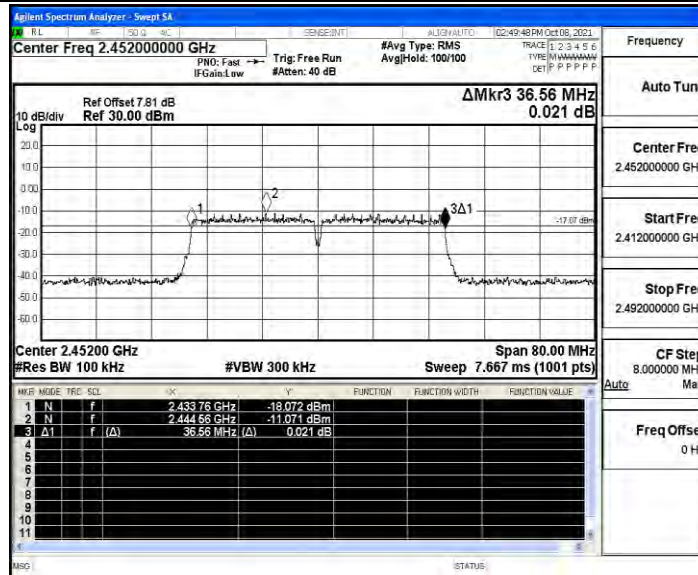




11N40SISO_Ant2_2437



11N40SISO_Ant2_2452





Appendix C.4.2: Occupied Channel Bandwidth

N/A

Appendix C.5: Conducted Spurious Emission

Test Result

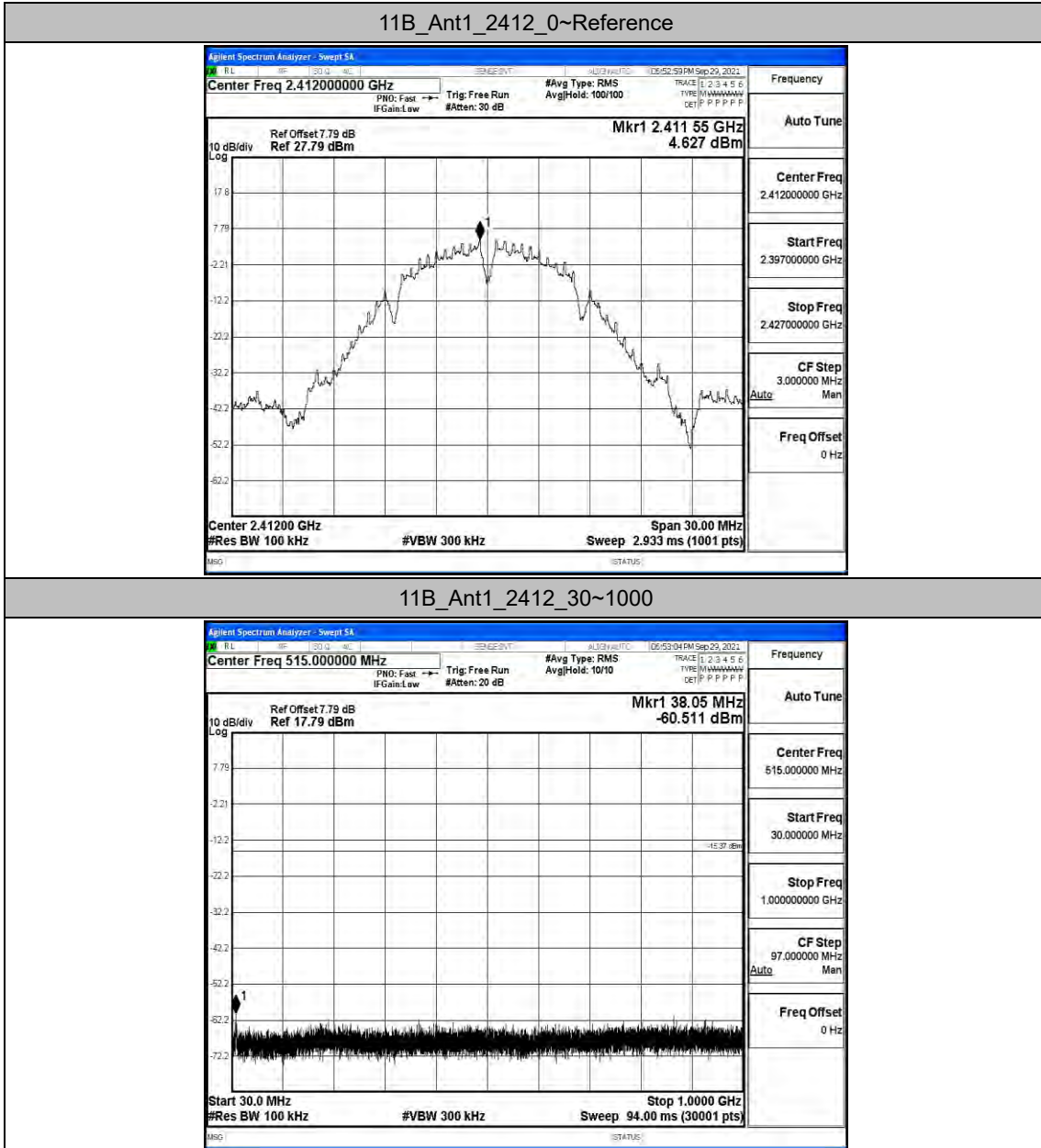
ANT 1

TestMode	Antenna	Channel	FreqRange [Mhz]	RefLevel [dBm]	Result [dBm]	Limit [dBm]	Verdict
11B	Ant1	2412	Reference	4.63	4.63	---	PASS
			30~1000	4.63	-60.51	≤-15.37	PASS
			1000~26500	4.63	-47.15	≤-15.37	PASS
		2437	Reference	5.17	5.17	---	PASS
			30~1000	5.17	-60.48	≤-14.83	PASS
			1000~26500	5.17	-47.9	≤-14.83	PASS
		2462	Reference	5.14	5.14	---	PASS
			30~1000	5.14	-60.31	≤-14.86	PASS
			1000~26500	5.14	-47.64	≤-14.86	PASS
11G	Ant1	2412	Reference	-8.08	-8.08	---	PASS
			30~1000	-8.08	-61.36	≤-28.08	PASS
			1000~26500	-8.08	-47.7	≤-28.08	PASS
		2437	Reference	-8.33	-8.33	---	PASS
			30~1000	-8.33	-58.59	≤-28.33	PASS
			1000~26500	-8.33	-47.42	≤-28.33	PASS
		2462	Reference	-8.88	-8.88	---	PASS
			30~1000	-8.88	-59.28	≤-28.88	PASS
			1000~26500	-8.88	-48.01	≤-28.88	PASS
11N20SISO	Ant1	2412	Reference	-7.90	-7.90	---	PASS
			30~1000	-7.90	-58.96	≤-27.9	PASS
			1000~26500	-7.90	-47.52	≤-27.9	PASS
		2437	Reference	-8.27	-8.27	---	PASS
			30~1000	-8.27	-61	≤-28.27	PASS
			1000~26500	-8.27	-47.51	≤-28.27	PASS
		2462	Reference	-8.23	-8.23	---	PASS
			30~1000	-8.23	-59.96	≤-28.23	PASS
			1000~26500	-8.23	-47.79	≤-28.23	PASS
11N40SISO	Ant1	2422	Reference	-11.43	-11.43	---	PASS
			30~1000	-11.43	-60.55	≤-31.43	PASS
			1000~26500	-11.43	-47.4	≤-31.43	PASS
		2437	Reference	-11.72	-11.72	---	PASS



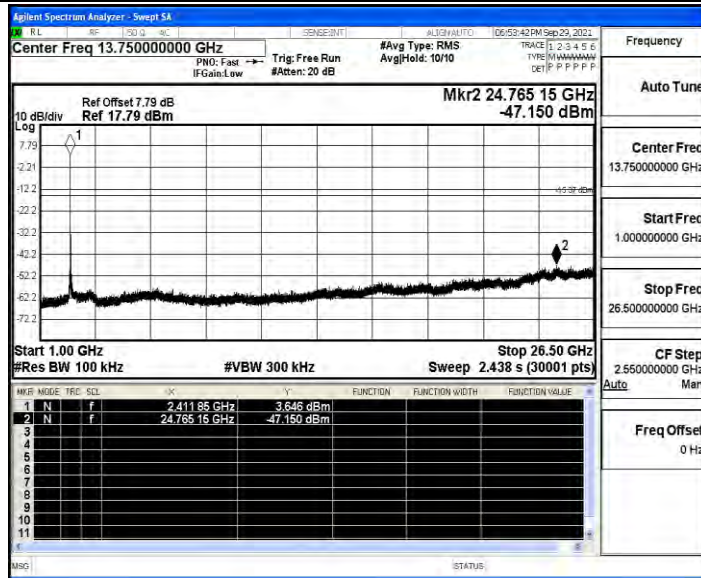
			30~1000	-11.72	-60.13	≤-31.72	PASS
			1000~26500	-11.72	-47.57	≤-31.72	PASS
		2452	Reference	-11.14	-11.14	---	PASS
			30~1000	-11.14	-58.34	≤-31.14	PASS
			1000~26500	-11.14	-47.61	≤-31.14	PASS

Test Graphs

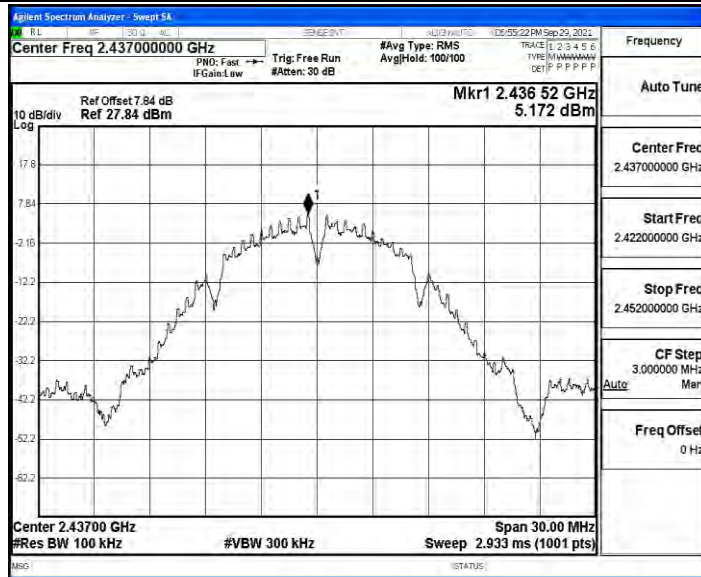




11B_Ant1_2412_1000~26500

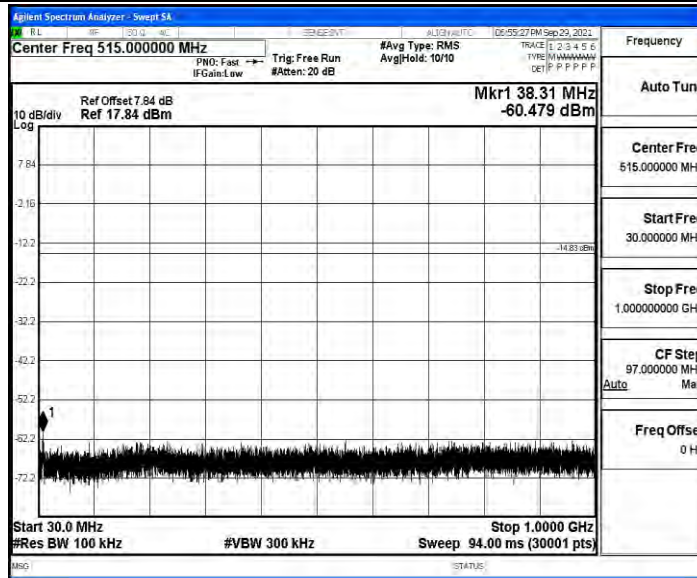


11B_Ant1_2437_0~Reference

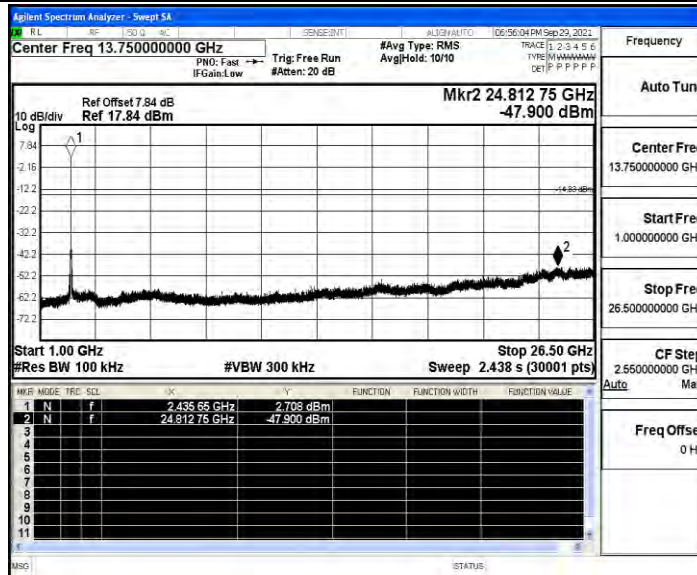




11B_Ant1_2437_30~1000

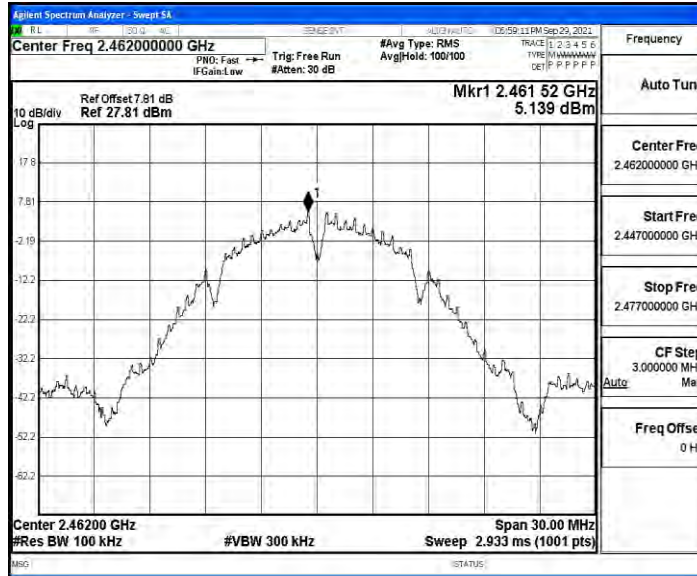


11B_Ant1_2437_1000~26500

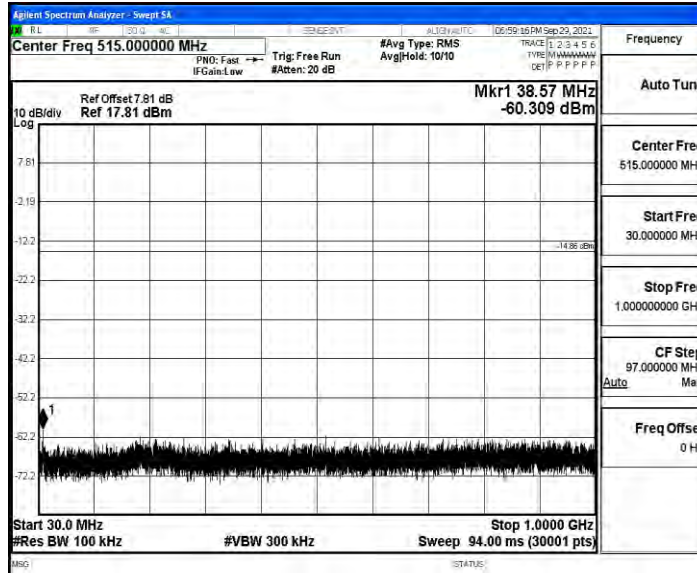




11B_Ant1_2462_0~Reference

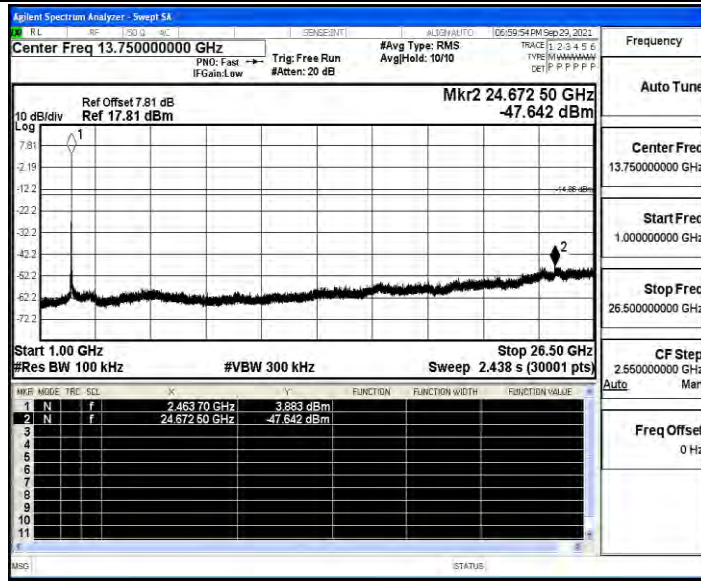


11B_Ant1_2462_30~1000

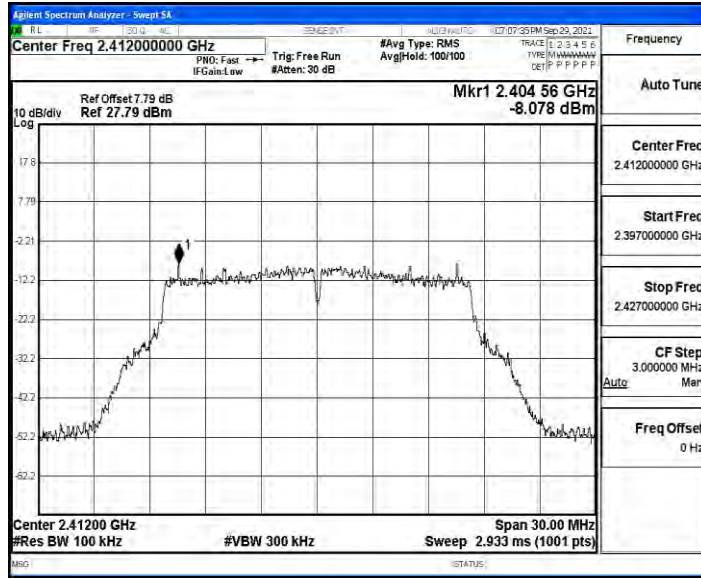




11B_Ant1_2462_1000~26500

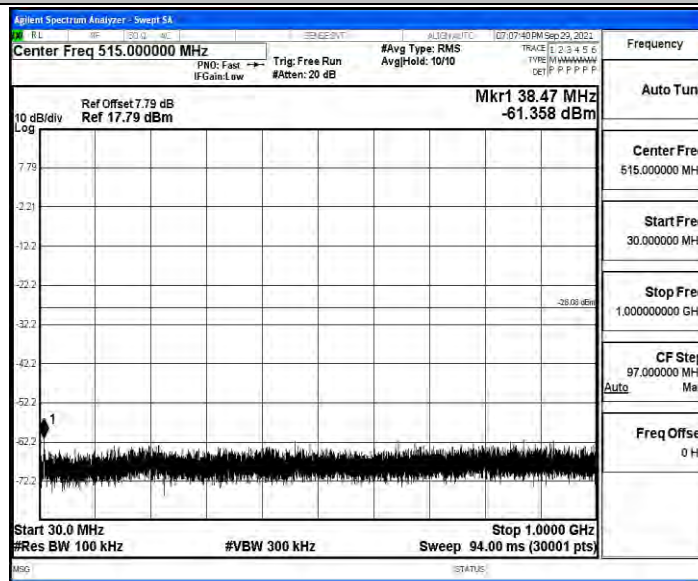


11G_Ant1_2412_0~Reference

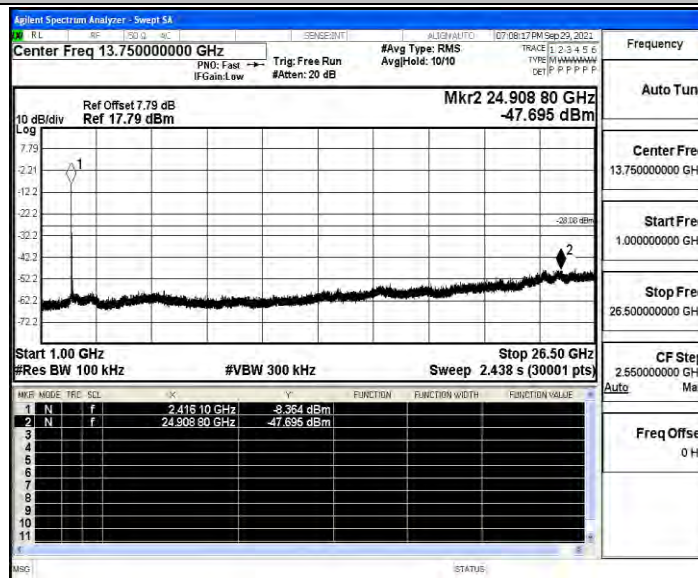




11G_Ant1_2412_30~1000

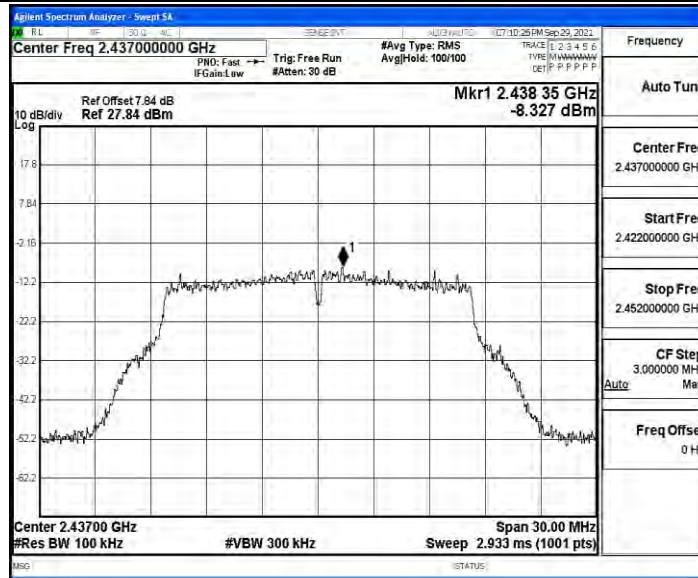


11G_Ant1_2412_1000~26500

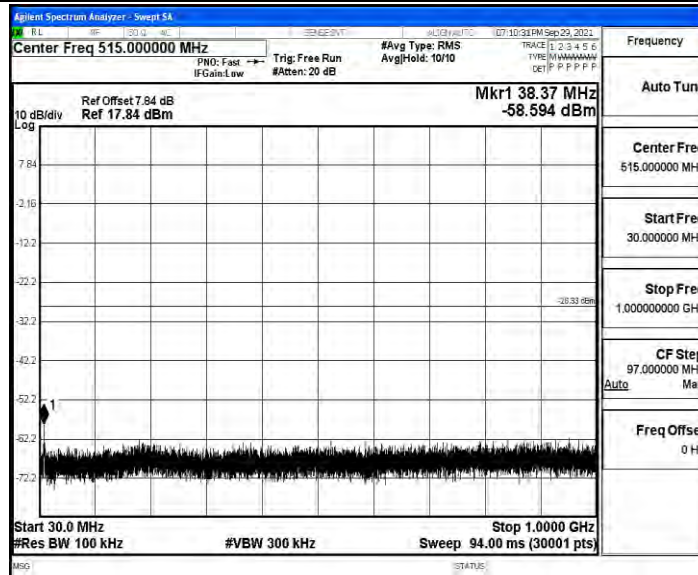




11G_Ant1_2437_0~Reference

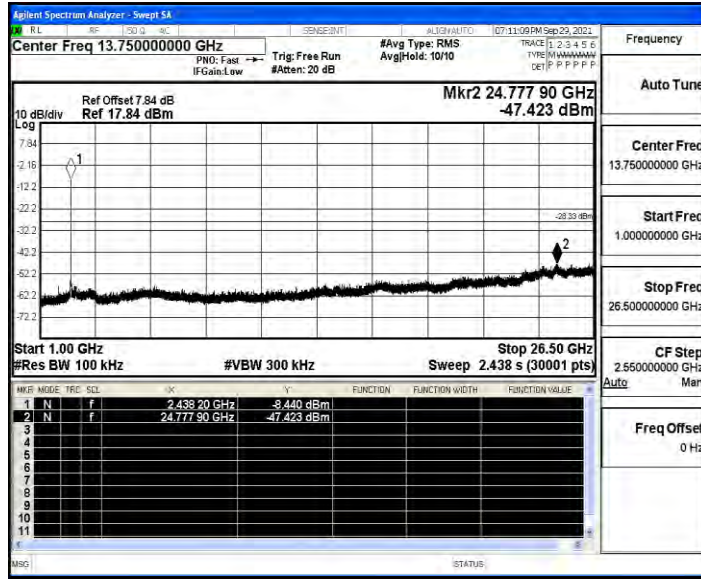


11G_Ant1_2437_30~1000

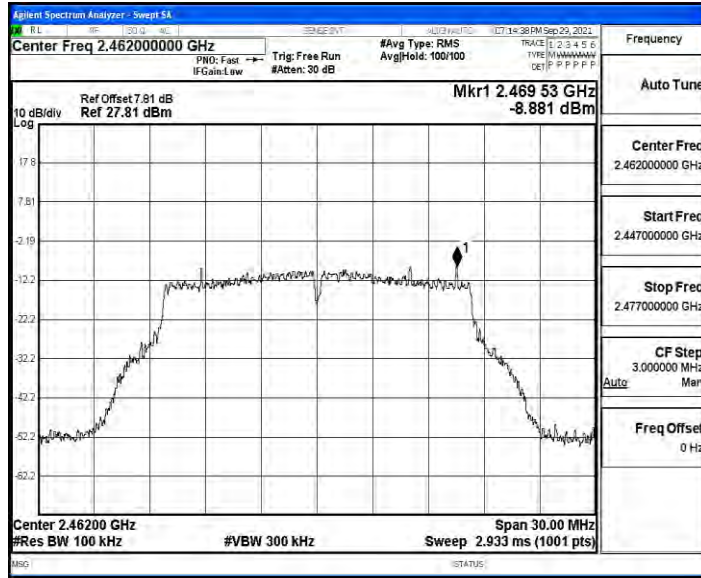




11G_Ant1_2437_1000~26500

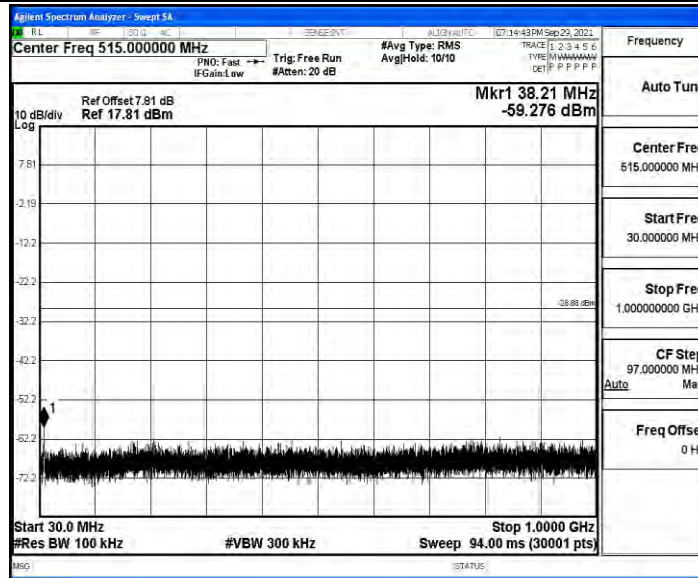


11G_Ant1_2462_0~Reference

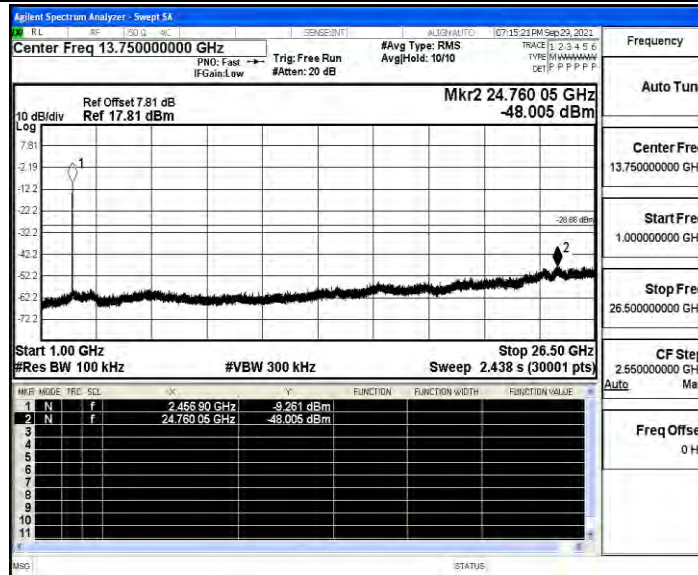




11G_Ant1_2462_30~1000

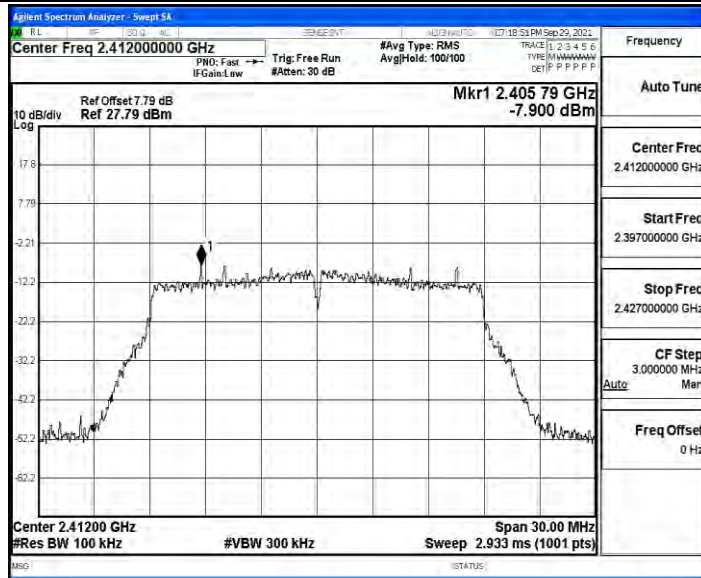


11G_Ant1_2462_1000~26500

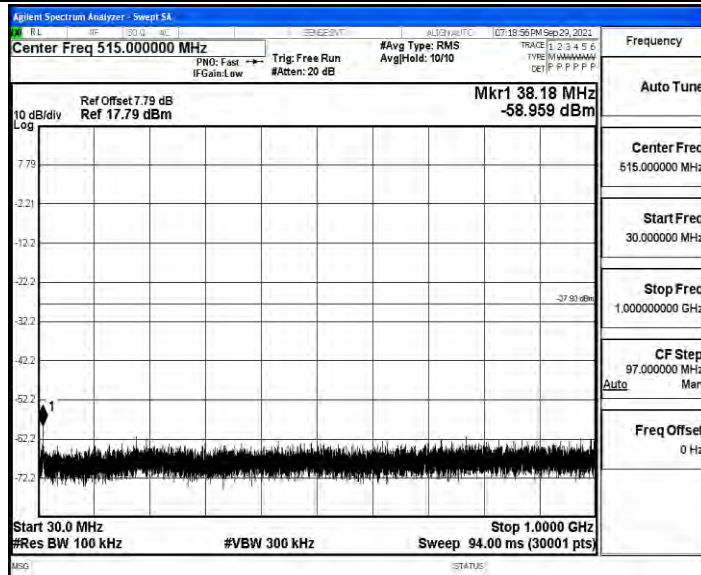




11N20SISO_Ant1_2412_0~Reference

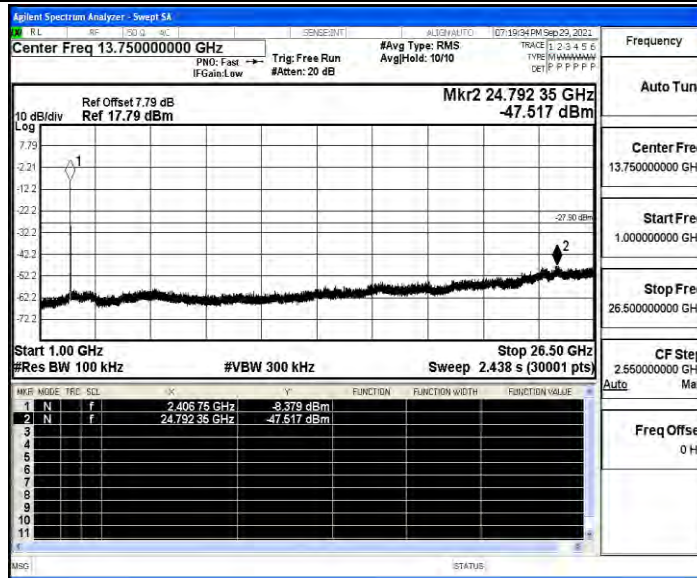


11N20SISO_Ant1_2412_30~1000

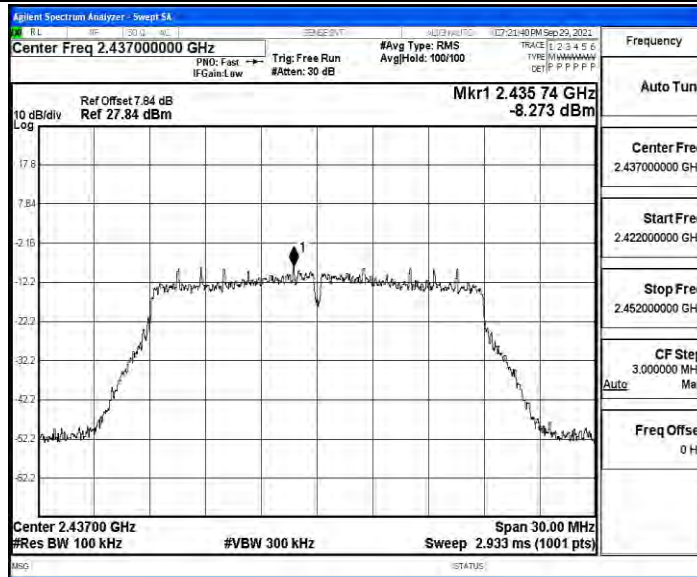




11N20SISO_Ant1_2412_1000~26500

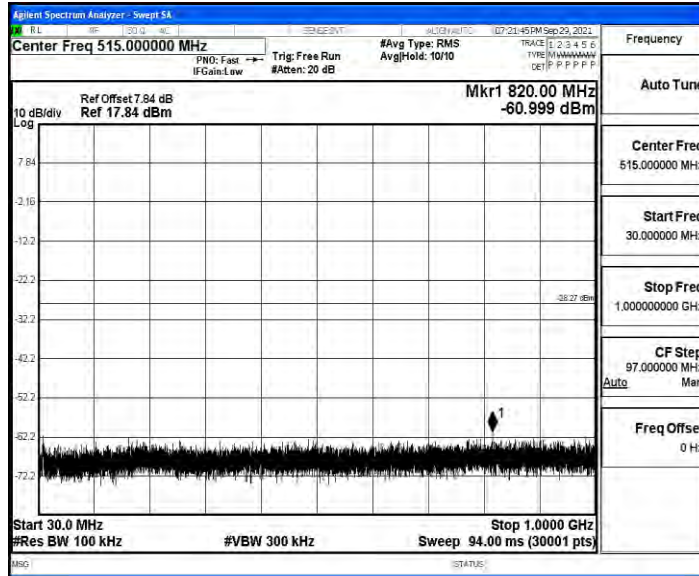


11N20SISO_Ant1_2437_0~Reference

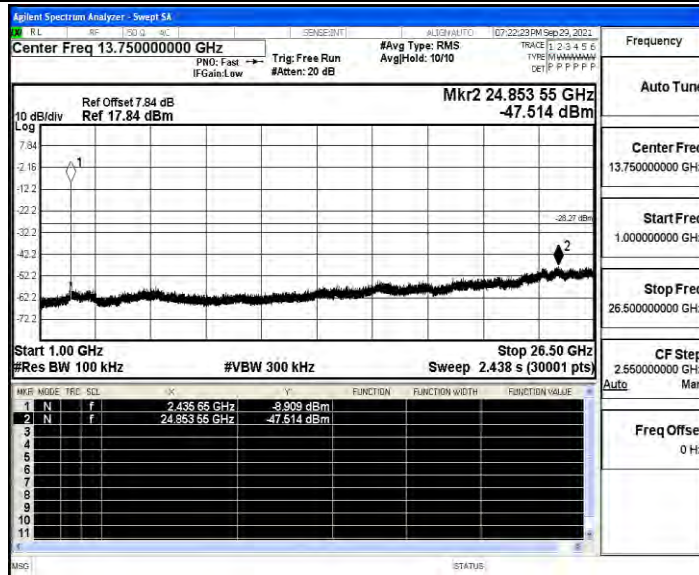




11N20SISO_Ant1_2437_30~1000

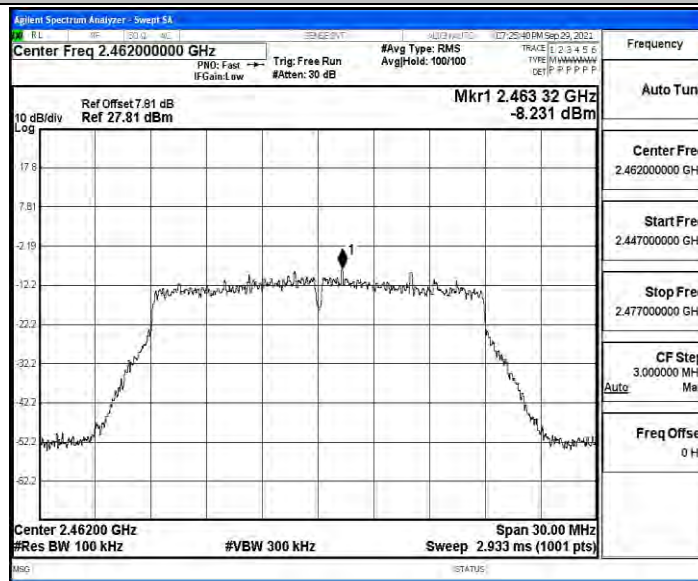


11N20SISO_Ant1_2437_1000~26500

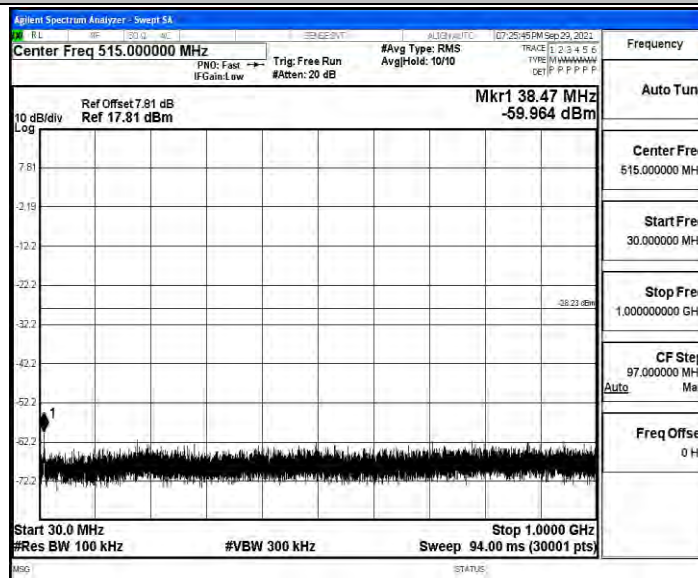




11N20SISO_Ant1_2462_0~Reference

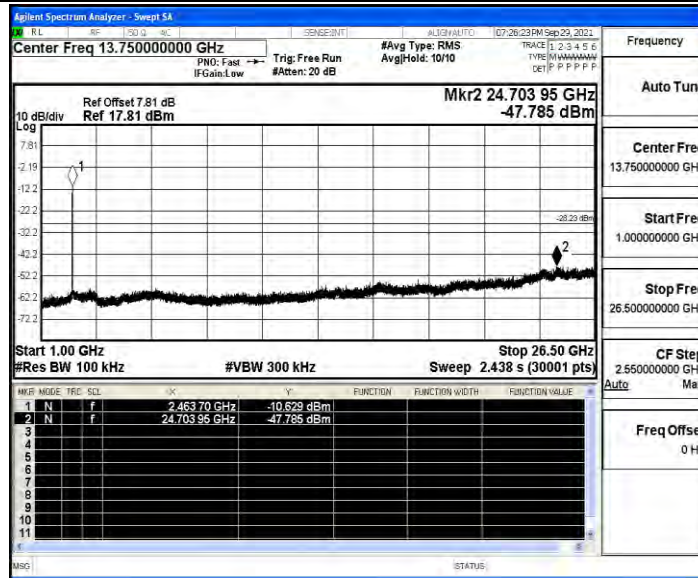


11N20SISO_Ant1_2462_30~1000

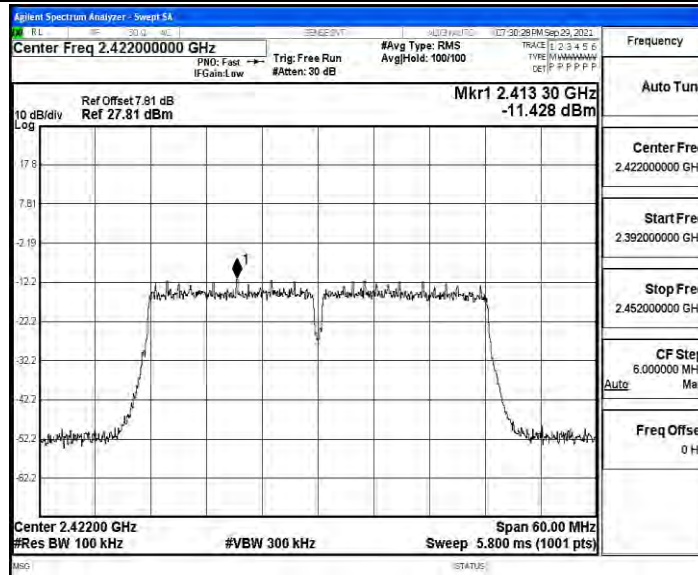




11N20SISO_Ant1_2462_1000~26500

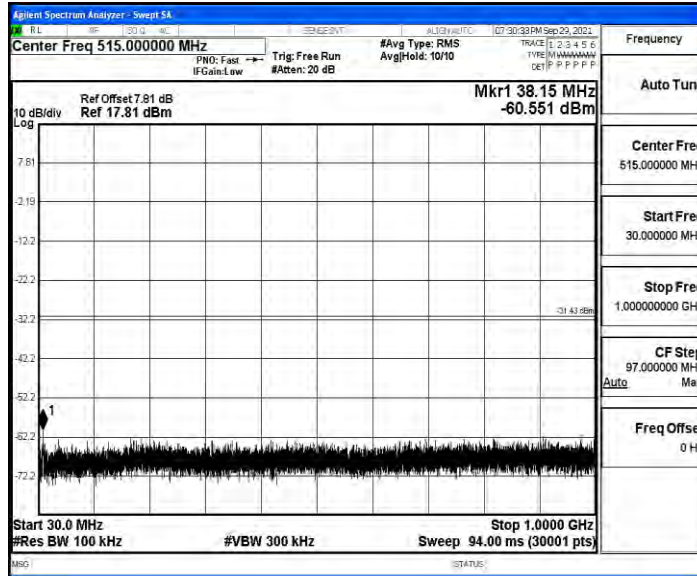


11N40SISO_Ant1_2422_0~Reference

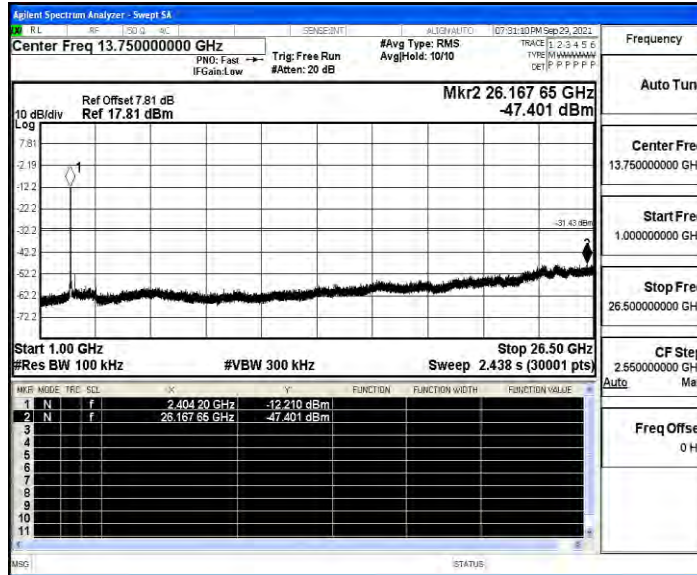




11N40SISO_Ant1_2422_30~1000

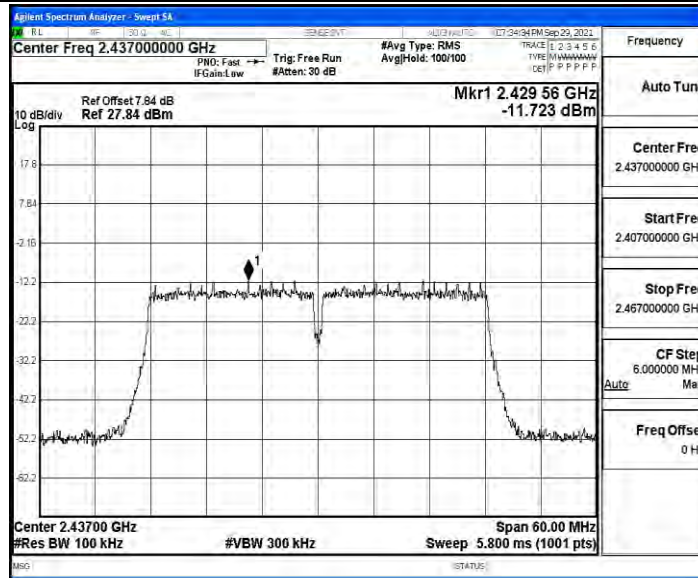


11N40SISO_Ant1_2422_1000~26500





11N40SISO_Ant1_2437_0~Reference



11N40SISO_Ant1_2437_30~1000

